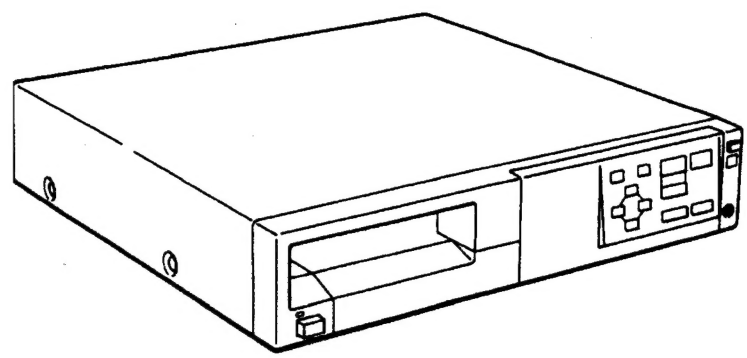
SONY

COLOR VIDEO PRINTER

UP-1200A
UP-1200AEPM

SERVICE MANUAL



SAFETY RELATED COMPONENT WARNING

Components identified by shading and ⚠ marked on the schematic diagrams and parts list are critical to safe operation. Replace these components with SONY parts whose part numbers appear as shown in this manual or in supplements published by SONY.

Note:

This service manual is jointly used for the UP-1200A (UC) and UP-1200AEPM (EK) destinations.
If a difference exists between each destination, the model name is described on the corresponding page.
The common description is not contained in this manual.

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SECTION 1
GENERAL

This section is extracted from instruction manual.

1-1. SPECIFICATIONS UP-1200A

Power requirements
120 V AC, 50/60 Hz
Power consumption
About 1.8 A max. at 25°C, 120 V AC
Operating temperature
5°C to 35°C (41°F to 95°F)
Dimensions
About 424 × 91 × 397 mm (w/h/d)
(16 3/4 × 3 5/8 × 15 3/4 inches)
Mass
About 8.5 kg (18 lb 12 oz)
Printing system
Sublimination heat transfer printing
Thermal head
5.6 dot/mm (512 dots)
Total gradation
256 levels each for yellow, magenta, and cyan
Printing time
Approximately 60 seconds (normal size color printing)
Approximately 30 seconds (monochrome printing)
TV system
NTSC/EIA standards
Input connectors
S-VIDEO (Separate luminance (Y) and chrominance (C) signals): DIN 4-pin
Y: 1 Vp-p
C: 0.29 Vp-p color burst
75 ohms (75 ohm termination switch set to ON)
VIDEO (NTSC composite video signal): BNC connector
1 Vp-p, 75 ohms (75 ohm termination switch set to ON), sync negative
AC IN (for power input)
Output connectors
S-VIDEO (Separate luminance (Y) and chrominance (C) signals): DIN 4-pin
Y: 1 Vp-p, 75 ohms
C: 0.29 Vp-p color burst, 75 ohms
(75 ohm termination switch set to ON)
VIDEO (NTSC composite video signal): BNC connector,
1 Vp-p, 75 ohms (75 ohm termination switch set to ON), sync negative
Controls connectors
REMOTE 1 (front panel, for the supplied remote control unit only): Special mini jack
REMOTE 2 (automatic printing connector): Stereo mini jack
For details of the timing pulse to REMOTE 2, see "Using the automatic printing capabilities" on this page.

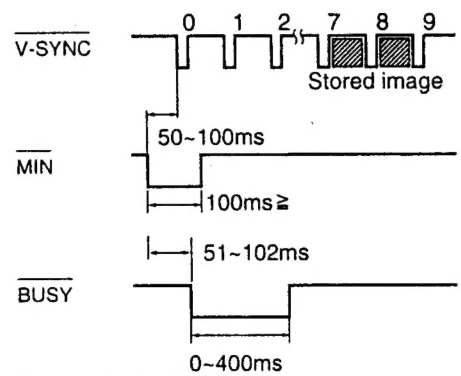
Ink ribbon cassette and printing sheet sets
Color printing pack: UPC-1010 (100 sheets)
B & W printing pack: UPC-1020 (100 sheets)
Self laminating color printing pack: UPC-1040 (75 sheets)
Supplied accessories
Color printing pack (1)
Paper tray (1)
Paper cover (1)
Remote control unit (1)
Connecting cable for the remote control unit (1)
Dry battery SUM-3 (NU) (2)
AC power cord (1)
Warranty card (1)
Operating instructions (1)

Using the automatic printing capabilities (REMOTE 2)

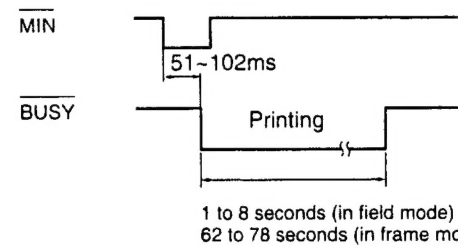
If you send the remote control pulse signals illustrated below through the REMOTE 2 connector, the printer is remotely controlled accoring to the settings of REMOTE 2 from the SET UP menu. (see "Selecting the Operation Mode for Automatic Printing Capabilities" page 52)

To begin, turn on the power and select the input signal. Display the image from the video source, then send a remote control signal shown below.

MEMORY IN timing



Printing timing



1 to 8 seconds (in field mode)
62 to 78 seconds (in frame mode)

Design and specifications are subject to change without notice.

UP-1200AEPM

Power requirements
220 to 240 V AC (~), 50/60 Hz
Power consumption
About 1.0 A max. at 25°C, 240 V AC (~)
Operating temperature
5°C to 40°C (41°F to 104°F)
Operating humidity
20 % to 80 % (no condensation allowed)
Storage and transport temperature
–20°C to 60°C (–4°F to 140°F)
Storage and transport humidity
20 % to 90 % (no condensation allowed)
Dimensions
About 424 × 91 × 397 mm (w/h/d)
(16 3/4 × 3 5/8 × 15 3/4 inches)
Mass
About 8.5 kg (18 lb 12 oz)
Printing system
Sublimination heat transfer printing
Thermal head
6.72 dot/mm (608 dots)
Total gradation
256 levels each for yellow, magenta, and cyan
Frame memory
One frame memory
Printing time
Approximately 60 seconds (normal size color printing)
Approximately 30 seconds (monochrome printing)
TV system
PAL B.G.I. standards
Input connectors
S-VIDEO (Separate luminance (Y) and chrominance (C) signals): DIN 4-pin
Y: 1 Vp-p
C: 0.3 Vp-p color burst
75 ohms (75 ohm termination switch set to ON)
VIDEO (PAL composite video signal): BNC connector
1 Vp-p, 75 ohms (75 ohm termination switch set to ON), sync negative
AC IN (for power input)
Output connectors
S-VIDEO (Separate luminance (Y) and chrominance (C) signals): DIN 4-pin
Y: 1 Vp-p, 75 ohms
C: 0.3 Vp-p color burst, 75 ohms
(75 ohm termination switch set to ON)
VIDEO (PAL composite video signal): BNC connector
1 Vp-p, 75 ohms (75 ohm termination switch set to ON), sync negative
Controls connectors
REMOTE 1 (front panel, for the supplied remote control unit only): Special mini jack
REMOTE 2 (automatic printing connector): Stereo mini jack
For details of the timing pulse to REMOTE 2, see "Using the automatic printing capabilities" on this page.

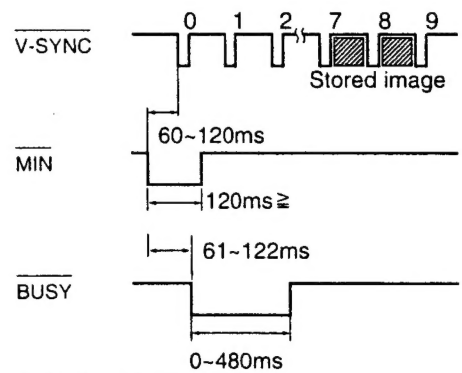
Ink ribbon cassette and printing sheet sets
Color printing pack: UPC-1010 (100 sheets)
B & W printing pack: UPC-1020 (100 sheets)
Self laminating color printing pack: UPC-1040 (75 sheets)
Supplied accessories
Color printing pack UPC-1010 (1)
Paper tray (1)
Paper cover (1)
Remote commander RM-5100 (1)
Connecting cable for the remote commander (1)
Dry battery (R6) (2)
AC power cord (1)
Instructions For Use (1)

Using the automatic printing capabilities (REMOTE 2)

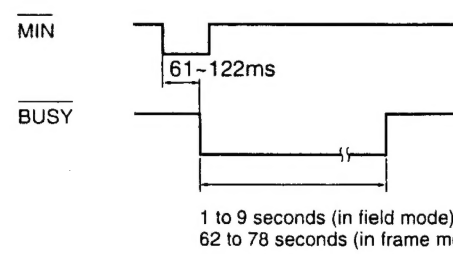
If you send the remote control pulse signals illustrated below through the REMOTE 2 connector, the printer is remotely controlled accoring to the settings of REMOTE 2 from the SET UP menu. (see "Selecting the Operation Mode for Automatic Printing Capabilities" page 54)

To begin, turn on the power and select the input signal. Display the image from the video source, then send a remote control signal shown below.

MEMORY IN timing



Printing timing



1 to 9 seconds (in field mode)
62 to 78 seconds (in frame mode)

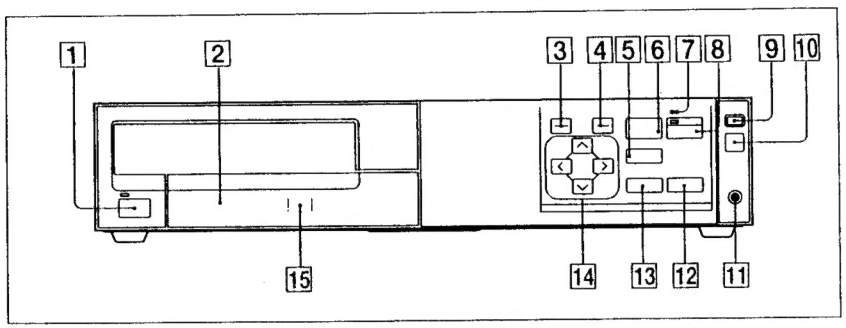
Design and specifications are subject to change without notice.

1-2. LOCATION AND FUNCTION OF PARTS AND CONTROLS

UP-1200A

For details, see the pages indicated in ( ).

Front



1 POWER switch
Press to turn the printer on or off.

2 Paper tray/paper cover (10, 41)
Paper tray: Load paper into this tray.
Paper cover: The printout is ejected to this tray

3 MENU button
This button is used to display menus or to return to the regular screen from the main menu or sub menus.

4 EXEC button (29, 35, 36, 37, 49)
Press this button to return to the previous menu. Also, this button is used to enter characters for a caption.

5 SOURCE/MEMORY button (15, 31, 32, 52)
Press to select which signal is to be output to the monitor.
The memory image and source image are changed whenever you press this button.

6 MEMORY IN button (15, 31, 32)
Press to store an image into memory.

7 ALARM lamp (66)
This lamp lights, in orange, when the paper has jammed or another error occurs.

8 PRINT button (16, 31, 32)
Press to make printouts.

9 PUSH OPEN button (8)
Press to open the right front panel door when loading an ink ribbon cassette.

10 Remote sensor (43)
Aim the head of the remote control unit toward this sensor.

11 REMOTE 1 connector (41)
Used to Connect the remote control unit (supplied) when being used as a wired type.

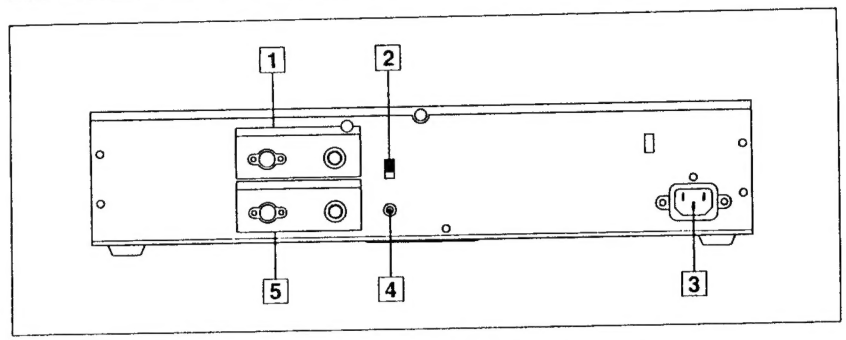
12 STOP button (16, 20, 31, 56)
Press to stop printing midway.

13 MEMORY PAGE button (25)
Press to select the memory page.

14 Cursor keys
Press to position the cursor. Select a desired item from the menu by pressing the ∧ or ∨ button and set the value by pressing the < or > button.
Also, these keys are used to enter characters for a caption.

15 PUSH indication (10, 68)
Press to remove the paper tray.

Rear



1 INPUT connectors (39)
Used to connect to the video equipment for source image.

Connector	Connectable equipment
S-VIDEO	Video equipment with a Y/C separated output
VIDEO	Video equipment with a composite video signal output

2 75-ohm termination switch (for RGB input signal and composite video signal) (39)
Normally, set this switch to ON. Set it to OFF if the input signal should drop when you connect additional equipment to the video equipment.

3 AC IN connectorx (39, 40, 41)
Used to connect to a wall outlet with the supplied power cord.

4 REMOTE 2 connector (41)
Used to connect the FS-20 foot switch (not supplied) or input remote control pulse signals for automatic printing.

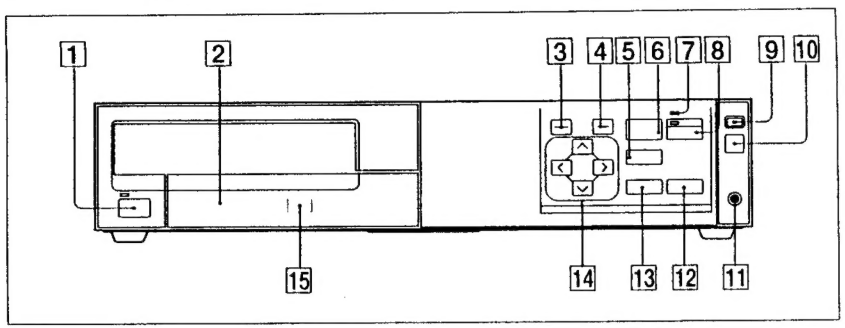
5 OUTPUT connectors (40)
Used to connect to the video monitor.

Connector	Connectable video monitor
S-VIDEO	Video monitor with a Y/C separated input
VIDEO	Video monitor with a composite video signal input

UP-1200AEPM

For details, see the pages indicated in ( ).

Front



1 POWER ⏻ switch
Press to turn the printer on or off.

2 Paper tray/paper cover (10, 41)
Paper tray: Load paper into this tray.
Paper cover: The printout is ejected to this tray

3 MENU button
This button is used to display menus or to return to the regular screen from the main menu or sub menus.

4 EXEC button (29, 35, 36, 37, 49)
Press this button to return to the previous menu. Also, this button is used to enter characters for a caption.

5 SOURCE/MEMORY button (15, 31, 32, 52)
Press to select which signal is to be output to the monitor.
The memory image and source image are changed whenever you press this button.

6 MEMORY IN ⇨ button (15, 31, 32)
Press to store an image into memory.

7 ALARM lamp (66)
This lamp lights, in orange, when the paper has jammed or any problem occurs.

8 PRINT ❑ button (16, 31, 32)
Press to make printouts.

9 PUSH OPEN button (8)
Press to open the right front panel door when loading an ink ribbon cassette.

10 Remote sensor (43)
Aim the head of the remote control unit toward this sensor.

11 REMOTE 1 connector (41)
Used to Connect the remote control unit (supplied) when being used as a wired type.

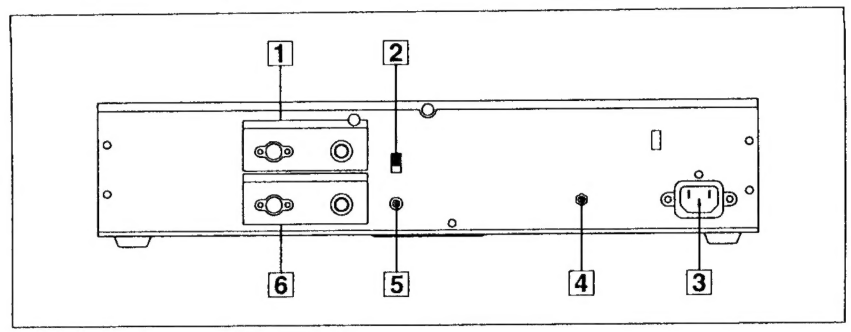
12 STOP button (16, 20, 31, 56)
Press to stop printing midway.
Press this button when the message "STOP STOP STOP" appears.

13 MEMORY PAGE button (25)
Press to select the memory page.

14 Cursor keys
Press to position the cursor. Select a desired item from the menu by pressing the ∧ or ∨ button and set the value by pressing the < or > button.
Also, these keys are used to enter characters for a caption.

15 PUSH indication (10, 68)
Press to remove the paper tray.

Rear



1 INPUT connectors (39)
Used to connect to the video equipment for source image.

Connector	Connectable equipment
S-VIDEO	Video equipment with a Y/C separated output
VIDEO	Video equipment with a composite video signal output

Refer to "Important safeguards/notices for use in the medical environments on page 2.

2 75-ohm termination switch (for PAL composite video signal) (39)
Normally, set this switch to ON. Set it to OFF if the input signal should drop when you connect additional equipment to the video equipment.

3 ~ AC IN connector (39, 40, 41)
Used to connect to a wall outlet with the supplied power cord.

4 Equipotential ground terminal ⏚
Used to connect to the equipotential plug to bring the various parts of a system to the same potential.
Refer to "Important safeguards/notices for use in the medical environments on page 2.

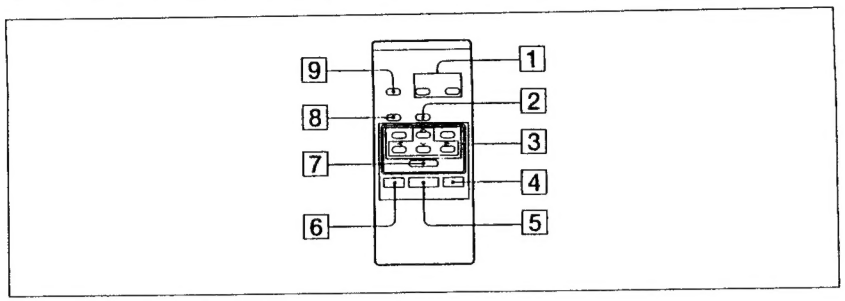
5 REMOTE 2 connector (41)
Used to connect the RM-91 remote commandnder (not supplied) or input remote control pulse signals for automatic printing.

6 OUTPUT connectors (40)
Used to connect to the video monitor.

Connector	Connectable video monitor
S-VIDEO	Video monitor with a Y/C separated input
VIDEO	Video monitor with a composite video signal input

Refer to "Important safeguards/notices for use in the medical environments on page 2.

Remote Control Unit

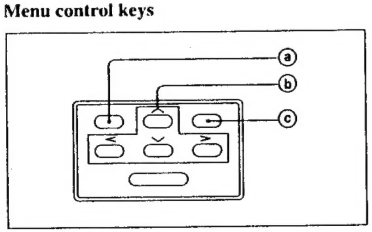


1 PRINT QTY + and – buttons (18)
Used to set the number of copies of one printout (on the regular screen).

Button	Operation
+	Increases the number of copies.
–	Reduces the number of copies.

2 MULTI PICTURE button (28)
Press to access the MULTI PICTURE sub menu directly from the any other screen.

3 Menu control keys



ⓐ MENU button
This button is used to display menus or to return to the regular screen from the main menu or sub menus.

ⓑ Cursor keys
Press to position the cursor. Select a desired item from the menu by pressing the ∧ or ∨ button and set the value by pressing the < or > button.
Also, these keys are used to enter characters for a caption.

ⓒ EXEC button (29, 35, 36, 37, 49)
Press this button to return to the previous menu. Also, this button is used to enter characters for a caption.

4 PRINT button (16, 31, 32)
Press to make printouts.

5 MEMORY IN button (15, 31, 32)
Press to store an image into memory.

6 SOURCE/MEMORY button (15, 31, 32, 52)
Press to select which signal is to be output to the monitor.
The memory image and source image are changed whenever you press this button.

7 STOP button (16, 31, 56)
Press to stop printing midway.
Press when "STOP STOP STOP" appears.
Press this button when the message "STOP STOP STOP" appears.

8 COLOR ADJUST button (45)
Press to access the COLOR ADJUST sub menu directly from any other screen.

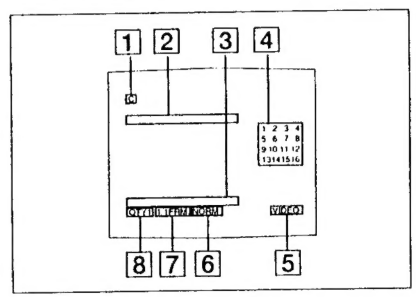
9 MEMORY PAGE button (25)
Press to select the memory page.

Monitor Display

There are two types of screen display; the regular screen display and the menu screen.

Regular screen message

When you first turn on the printer, the regular screen message appears.



1 C (Caption)
C is displayed in white when the printer is set to print a caption.
C is displayed in dark blue when the printer is not set to print a caption.
M is displayed in white when the printer is set to print a mirror caption.

2 Error message display area
Error messages are displayed.

3 Warning message display area
Warning messages are displayed.

4 Number of four or 16 reduced image area
When the printer is set to store multiple reduced images into memory, corresponding numbers appear to indicate the memory status.

5 Image type display
This indicates the type of image shown on the monitor screen.
When the image being played back from print source equipment is displayed on the screen, the corresponding print source (the input signal connector name, for example VIDEO) appears.
When an image stored in memory is displayed on the screen, MEMORY appears.

6 Print mode display
This indicates the selected print mode.
Several examples are shown below:

Display	Print mode
NORM	Makes a printout of one normal image
N2	Makes a printout of two identical normal images
MIR	Makes a printout of one mirror image
M16	Makes a printout of 16 reduced mirror images

7 Memory page display
The memory page you select appears.
The memory page whose image is being printed blinks in green.
The following shows several examples.

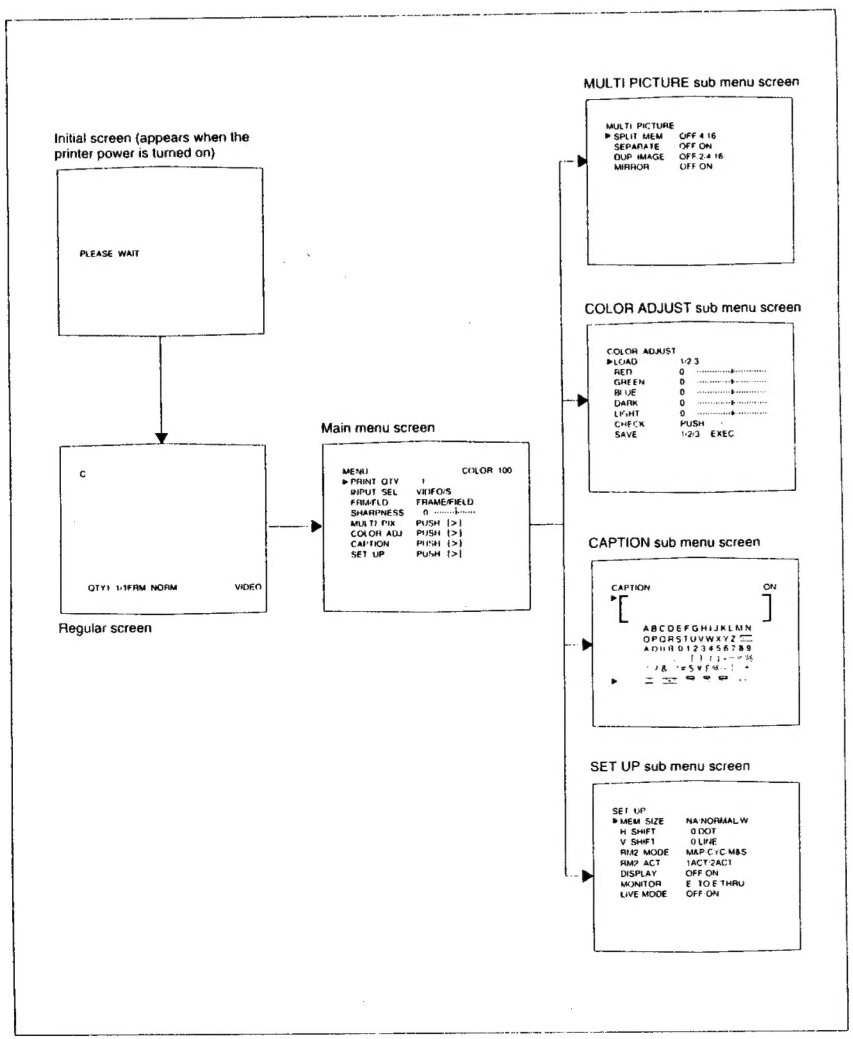
Display	Meaning
1/1FRM	The frame mode is selected.
1/2FLD	The second page is selected in field mode.

8 Number of copies to be printed
Indicates the number of copies to be printed.
This item blinks while the printer is busy. Also, the color changes to indicate the progress while making a color printout, as follows:
Printing start - yellow - magenta - cyan - printing end. When making black and white printouts, this blinks in white.

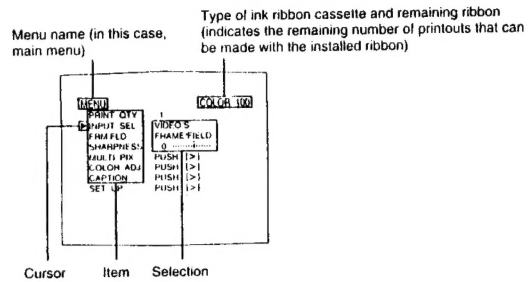
Menu screen

Menu screen tree-chart

The menu screen configuration is shown using the tree-chart.



Menu screen display



About remaining ribbon

Use the remaining ribbon display as a guide only. Depending on the type of ribbon being used, the printer may not be able to correctly display the actual amount of ribbon remaining.

Display color

The color indicates the printer status.

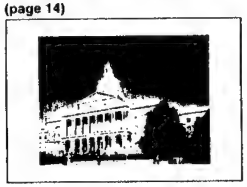
Display color	Meaning
Light blue	Indicates the menu name.
Green	In the item column, indicates the selected item. In the selection column, indicates an item that has already been set or one that must be set.
White	In both the item and selection column, indicates that the item has not been selected or has not yet been set.
Dark blue	Indicates that this item or selection cannot be selected. They are functions which become effective depending on another item or selection settings.

1-3. SYSTEM OVERVIEW

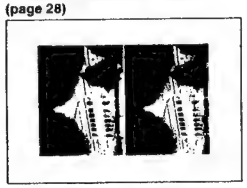
The Sony UP-1200/1200A color video printer is designed for capturing images from video equipment and making printouts of those images. By changing the printout mode, different types of printouts can be made. Also, you can add a caption to a printout. Printer setup is done interactively by picking from displayed menus. The printer can make the following types of printouts.

Printouts that can be made with the printer

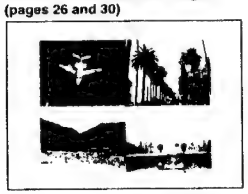
Printout of a full-size image (page 14)



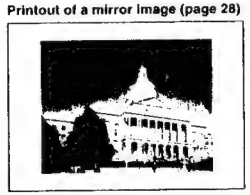
Printouts of identical images (page 28)



Printout of four reduced images (pages 26 and 30)

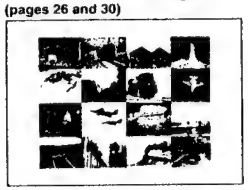


Printout of a mirror image (page 28)



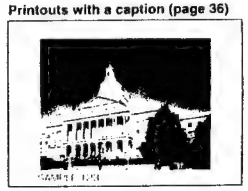
Printouts of mirror images where the image is rotated about its vertical axis

Printout of 16 reduced images (pages 26 and 30)



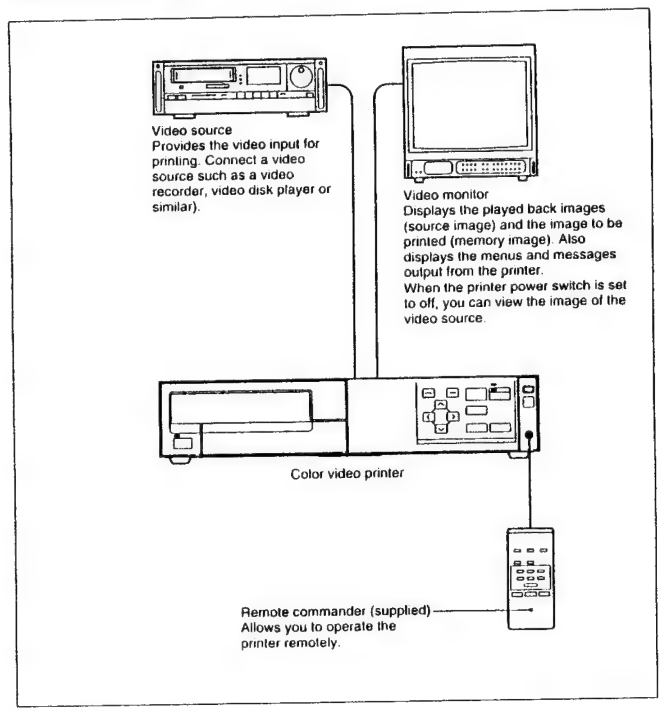
In addition to the above printouts of multiple reduced images, printouts of multiple reduced images with white borders can be made.

Printouts with a caption (page 36)



System Configuration

The following shows an example printer system configuration.



1-4. BEFORE PRINTING

This section describes the following operations that must be made prior to start printing after installing the printer and making connections.

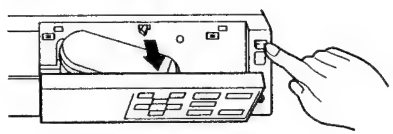
- Loading an ink ribbon cassette (see page 8)
- Loading paper (see page 10)
- Selecting the input signal (see page 12)

Once the above operations are done, there should be no need to subsequently perform in routine printing operations. Perform the above operations, if necessary.

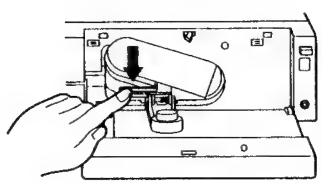
Loading an Ink Ribbon Cassette

To make printouts, an ink ribbon cassette and paper should be loaded. Both of those should be used in correct pairs. (see "Ink Ribbon Cassette and Paper" page 64)

1 Push the PUSH OPEN button.
The front panel opens.

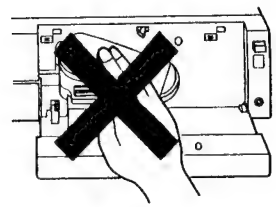


2 Remove the ink ribbon cassette by pulling down the EJECT lever.

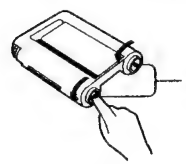


Note

Never put your hand into the ink ribbon cassette dock. The thermal head becomes very hot. You may burn yourself if you touch it.

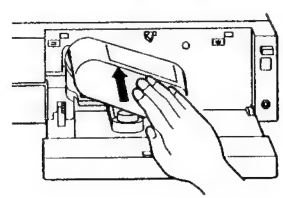


3 Take up any slack in the ink ribbon.
If the ribbon is left slack, it may be crumpled and damaged when inserted.

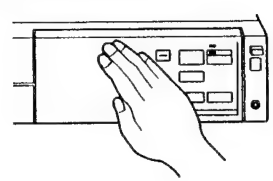


Wind the spools of the ink ribbon cassette as illustrated until a black bar extending full-width of the ribbon appears on the ink ribbon.

4 Insert the ink ribbon cassette firmly until it stops.



5 Close the front panel.



Notes

When using ink ribbon cassettes:

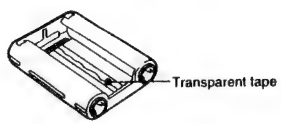
- Once an ink ribbon has been completely used, replace it. Ink ribbon cassettes are not reusable.
- Do not touch the ribbon or place the cassette in a dusty place. Body oils or dust stuck to the ink ribbon will cause imperfect printing.

When storing ink ribbon cassette:

- Avoid placing the ink ribbon cassette in a location subject:
  - –high temperatures
  - –high humidity
  - –excessive dust
  - –direct sunlight
- Store a partially used ink ribbon in its original bag.

If your ink ribbon should tear

Repair the tear with transparent tape. There should be no problem in using the remaining portion of the ribbon.



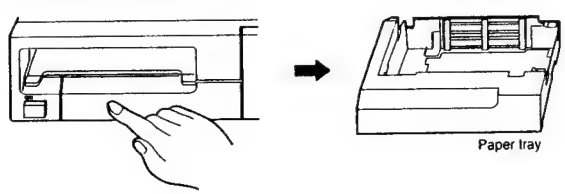
Loading Paper

Follow these steps to load paper in the printer. Use only the ink ribbon cassette and paper packed in the same carton, that is correctly in pairs. Be careful not to touch the printing surface.

Note

When loading the paper while the printer is operating, do not turn off the power. If you turn off the power, the image stored in memory will be lost.

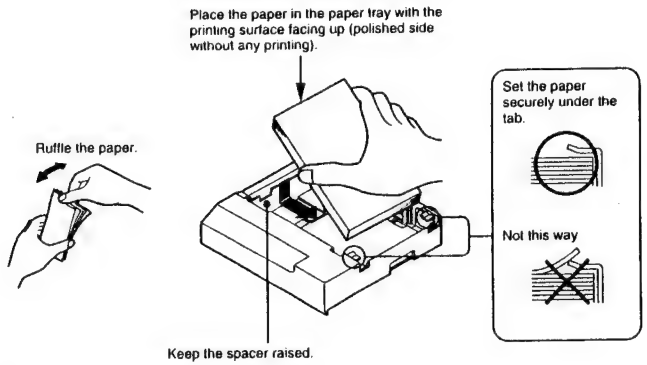
1 Push PUSH on the paper tray.
The paper tray is ejected.



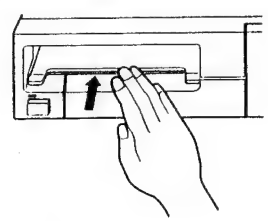
2 Place the paper into the paper tray.

Notes

- The paper tray holds up to 100 sheets. When you add paper to a partly-full tray, be careful that the total number of sheets does not exceed 100. If you exceed this limit, paper jams may occur.
- Load the paper so that it lays flat in the paper tray.
  If the paper is curled, it will overflow the paper tray and the printing position may shift. If this happens, load fewer sheets in the paper tray.



3 Slide the paper tray back into the printer until it clicks into place.



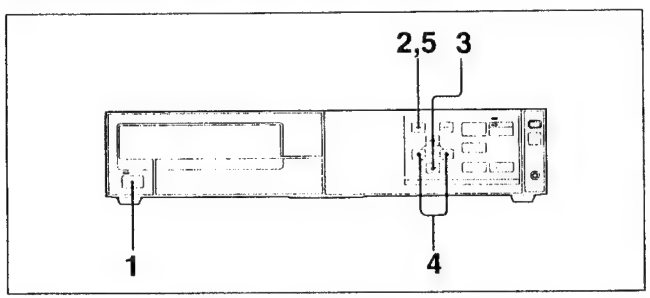
Notes

When storing paper:

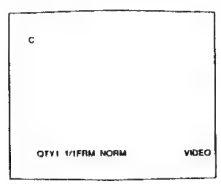
- Avoid placing the paper subject to:
  - –high temperatures
  - –high humidity
  - –excessive dust
  - –direct sunlight
- Keep the package for storing unused paper.

Selecting the Input Signal

Before printing, select the input signal. Once you have selected the input signal, this setting remains as is until you select another source.

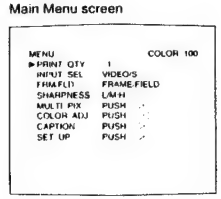


1 Turn on the video monitor and the printer.
The following message appears when the printer is ready to operate.

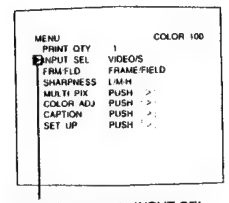


2 Press the MENU button.
The right screen appears.

Main Menu screen

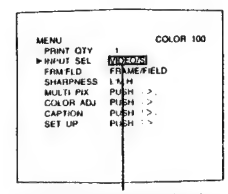


3 Select INPUT SEL by pressing the ∧ or ∨ button.



Move the cursor to INPUT SEL by pressing the ∧ or ∨ button.

4 Select the desired input signal by pressing the < or > button.



Switch the desired input signal to green by pressing the < or > button.
The name of the selected input signal appears in green.

Video monitor (The name of the selected input signal appear on the screen.)	**Source signal of the image to be printed**
V → VIDEO	Signal from the video equipment connected to the VIDEO INPUT connector
S → S-VIDEO	Signal from the video equipment connected to the S-VIDEO INPUT connector

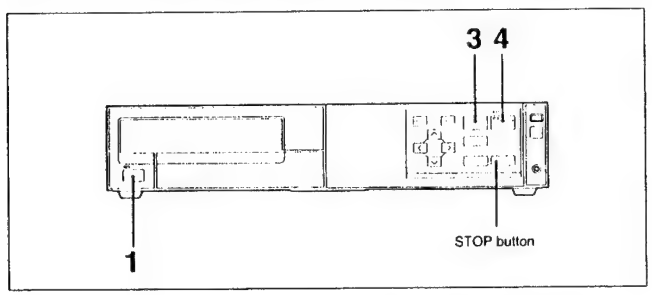
5 Press the MENU button.
The regular screen appears.

1-5. MAKING FULL-SIZE PRINTOUTS

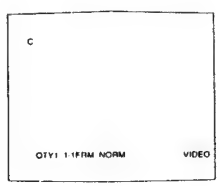
This section explains how to make a full-size printout. The operations described here is the basic procedure for making a printout.

Before making a full-size printout

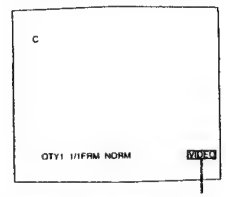
- All connections should have already been made. (see page 39)
- Ensure that the appropriate ink ribbon cassette/paper set is being used and that they are correctly loaded. (see pages 8, 10 and 64)
- Select the input signal to be used to make a printout. (page 12)
- Set the memory mode to store one full-size image into memory. (see page 27)
- Select the appropriate memory page. (see page 25)
- Set the print mode to make a printout of one normal full-size image. (see page 29)



1 Turn on the video monitor and the printer.
The right message appears when the printer is ready to operate.

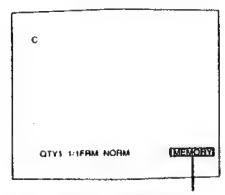


2 Start the video source.
(This operation is done using the controls of the video equipment acting as the source.)



Shows that the image from the video equipment are displayed on the screen.

3 Press the MEMORY IN button at the instant when the image you want to print appears on the screen.
That image is stored into memory.
The memory image (stored into memory) is displayed on the screen.



Shows that the images stored into memory is displayed on the screen.

If the stored image is blurred

A quickly moving image may be blurred when it is printed. If this happens, switch the FRM/FLD (frame/field) mode setting to FLD on the main menu and perform printing again. This should eliminate blur from the printout. However, since printing in field mode has a lower resolution than in the frame mode, the ultimate print quality will be slightly degraded.(see "About Memory" page 23)

To change the stored image

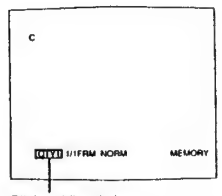
① Press the SOURCE/MEMORY button.
The image from the video source appears.
② Press the MEMORY IN button at the instant when the image you want to print appears.
The previous image is replaced.

Note

If you turn off the power, the image stored into memory will be lost. Thus, store the image into memory again when you turn on the power.

Continue to next page →

4 Press the PRINT button.
It takes about 60 seconds to make a color printout, or 30 seconds to make a black and white printout.



Blinks while printing.
During color printing: Printing start → yellow → magenta → cyan → printing end
During black and white printing: Printing start → white → printing end

Notes

- Do not handle the paper until printing has been completed.
- Do not open the front panel while the printer is printing. Doing so may produce an unsatisfactory printout.

To stop printing before completion

Press the STOP button. Printing is abandoned and the paper is ejected to the print tray.

If the printer does not print

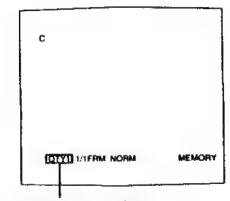
The printer will not print in the following case.
Wherever an error message is displayed on the video monitor. (see "Error Messages" page 64)

If a black line appears on the printout

Sometimes, a black line appears on the printout, although it does not appear on the video monitor. You can eliminate the black line from the printout. (see "Changing the Printout Area" page 52)

UP-1200AEPM

4 Press the PRINT button.
It takes about 60 seconds to make a color printout, or 30 seconds to make a black and white printout.



Blinks while printing.
During color printing: Printing start → yellow → magenta → cyan → printing end
During black and white printing: Printing start → white → printing end

Notes

- Do not handle the paper until printing has been completed.
- Do not open the front panel while the printer is printing. Doing so may produce an unsatisfactory printout.

To stop printing before completion

Press the STOP button. Printing is abandoned and the paper is ejected to the print tray.

If the printer does not print

The printer will not print when an error message is displayed on the video monitor. (see "Error Messages" page 64)

If a black line appears on the printout

Sometimes, a black line appears on the printout, although it does not appear on the video monitor. You can eliminate the black line from the printout. (see "Changing the Printout Area" page 52)

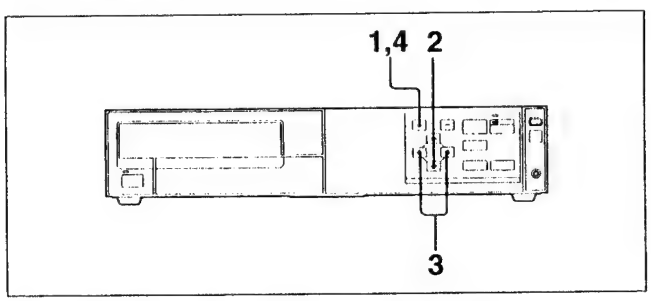
Notes

When preserving your printouts:

- Keep printouts in a dark and cool place.
- Do not to stick plastic tape to the print. Also avoid leaving plastic eraser on top of the printout or putting the printout between things which contain plasticizer (a desk mat, etc.).
- Do not to pour alcohol or other volatile organic solvents on the printouts.

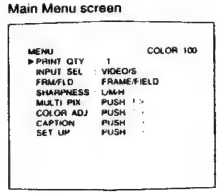
Making Multiple Copies of Identical Image

You can print up to 100 copies of a stored image.
Do the following steps before you start printing or while printing. You can change the designated number of copies any time during printing.

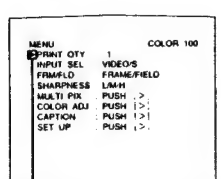


1 Press the MENU button.
The right screen appears.

Main Menu screen



2 Select PRINT QTY by pressing the ∧ or ∨ button.

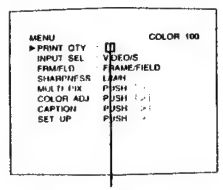


Move the cursor to PRT QTY by pressing the ∧ or ∨ button.

Continue to next page →

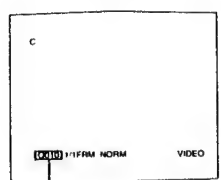
3 Set the number of copies by pressing the < or > button.

When setting	Button
To decrease the quantity	<
To increase the quantity	>



Quantity of copies

4 Press the MENU button.
The regular screen appears.



Quantity of copies set in step 3

When paper runs out during printing

Fill the paper tray with paper and press the PRINT button again. (see "Loading Paper" page 10)

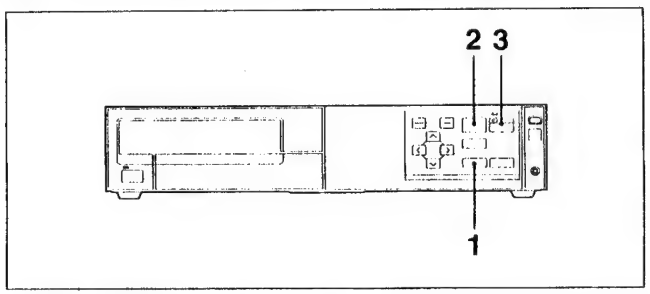
Designating the number of copies by the remote control unit

You can designate the number of copies directly on the regular screen.
To increase the number of copies, press the PRINT QTY + button. To decrease the number of copies, press the PRINT QTY – button.

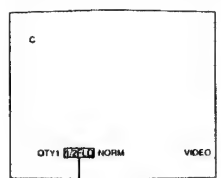
When setting	Button
To decrease the quantity	PRINT QTY –
To increase the quantity	PRINT QTY +

Queuing Images to be Printed

You can store images into the other memory page. These images are printed out as soon as the printer becomes free, provided field mode has been selected.



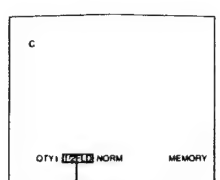
1 Select the memory page to be printed by pressing the MEMORY PAGE button.



The available memory page is displayed in white.

2 Press the MEMORY IN button at the instant the image you want to print appears on the screen.

3 Press the PRINT button.
The image selected in step 2 is queued, being printed out as soon as the previous printing job has been completed.



Memory page containing images that have been queued for printing (lights in green). The memory page is again displayed in white once printing has been completed.

Note

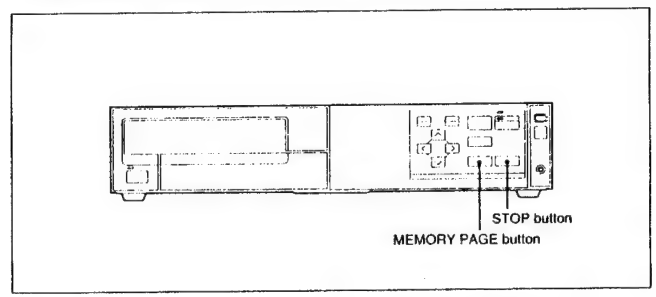
Another image cannot be stored into a memory page containing an image that has been queued for printing.

Deleting Images Stored into Memory Pages

You can delete images that have been stored in the memory pages.

Note

You cannot restore images once they have been deleted.



While holding down the STOP button, press the MEMORY PAGE button. All images are deleted from the memory pages.

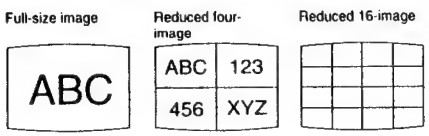
Note

You cannot delete images stored into memory pages by using the supplied remote commander.

1-6. MAKING VARIATIONS OF PRINTOUTS

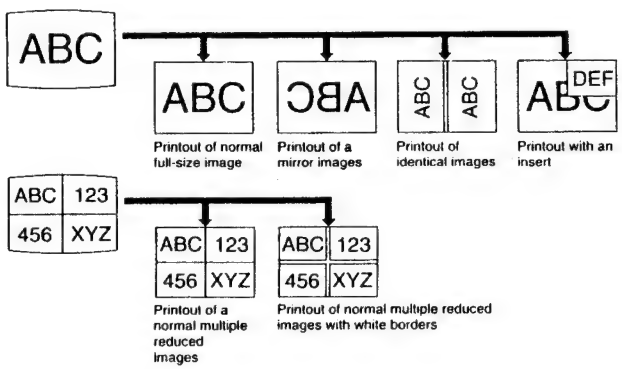
You can store various kinds of images into memory by changing the memory mode and can vary the printout of the stored images by changing the print mode.
This section explains how to set the memory mode and change the print mode.

Types of images that can be stored into memory



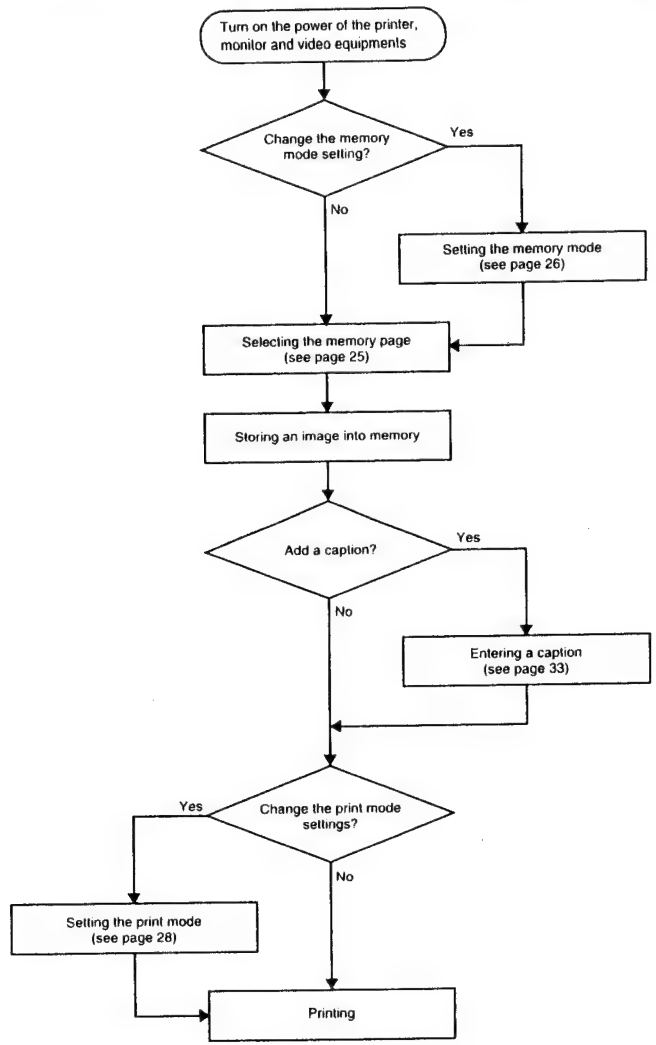
Types of printouts that the printer can produce

By varying the print mode, the following types of printout can be made using images stored in memory.



Printing Operation Flowchart

The following flowchart shows the flow of a printing operation.

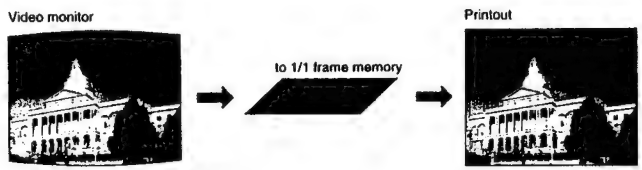


About Memory

To make a printout, it is first necessary to store the desired image into memory. The method of storing images into memory is called memory mode.
By setting memory mode, you can store a full-size image or multiple reduced images into memory.
Also, you have to decide how to use the printer's memory to store images. Two methods of using memory are supported. One is frame mode, while the other is field mode. The number of memory images you can store depends on whether you select frame or field mode.

Frame mode and filed mode

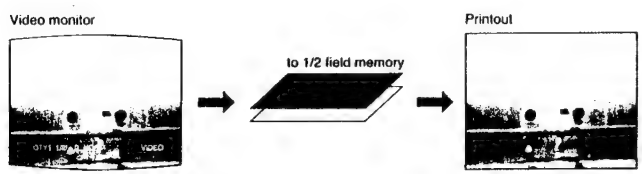
Frame (FRM) mode
Once image is tored in one memory.



1/1FRM: Frame-mode memory page

A still subject can be printed with high resolution.

Field (FLD) mode
One memory is divided into two, and images for the two screens are stored to the resulting memory pages.

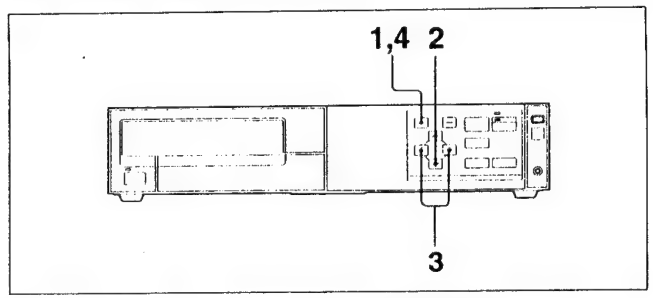


1/2FLD: The first memory page of two field-mode memory pages

A quickly moving subject can be printed without blurring.

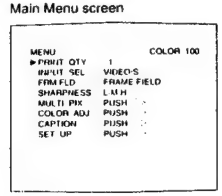
Selecting frame or field mode

Before storing an image, select frame or field mode.

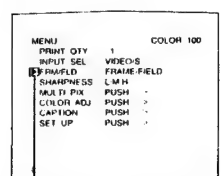


1 Press the MENU button.
The following screen appears.

Main Menu screen



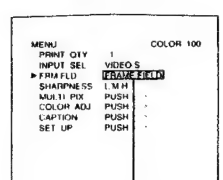
2 Select FRM/FLD by pressing the ∧ or ∨ button.



Move the cursor to FRM/FLD by pressing the ∧ or ∨ button.

3 Select the desired mode by pressing the < or > button.

FRAME: We recommend that, whenever possible, you print in this mode.
FIELD: Select this mode to reduce blurring when you print a quickly moving image.



Switch the desired mode to green by pressing the < or > button.

4 Press the MENU button.
The regular screen appears.

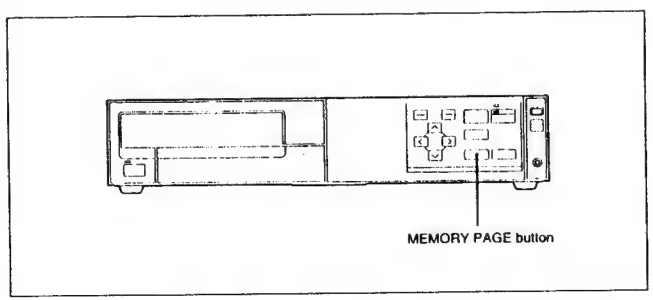
About memory pages

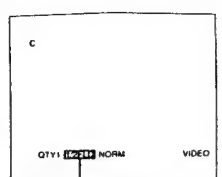
The unit has a single frame memory, enabling the unit to store one image in one memory page when FRM mode is selected, or two images in two memory pages when FLD mode is selected.
The memory used to store one screen image is called a memory page.

Selected memory mode	Number of usable memory pages	Usable memory pages
Frame mode (FRM)	1	1/1FRM
Field mode (FLD)	2	1/2FLD or 2/2FLD

Selecting a memory page

To select a memory page, press the MEMORY PAGE button.





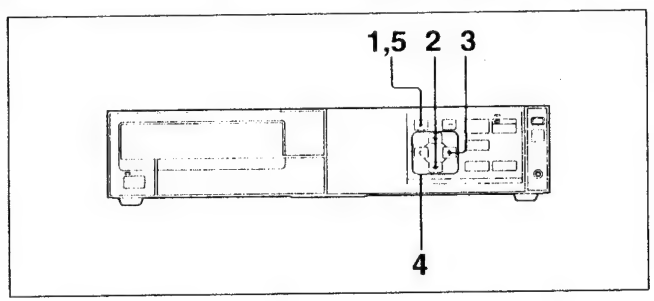
Press the MEMORY PAGE button until the desired memory page appears.

Selecting the Memory Mode

Decide the method for storing images in memory. Once you have selected memory mode, this setting remains as is until reset, even if you turn the power off.

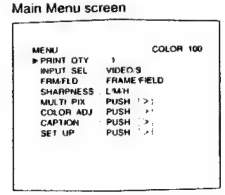
To control the printer remotely by using the remote control unit (supplied)

You can access the MULTI PICTURE sub menu by pressing the MULTI PICTURE button. Thus, press the MULTI PICTURE button to display the MULTI PICTURE sub menu. Then, follow the procedure below, starting from step 4.

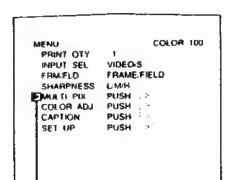


1 Press the MENU button.
The right screen appears.

Main Menu screen



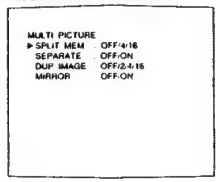
2 Select MULTI PIX by pressing the ∧ or ∨ button.



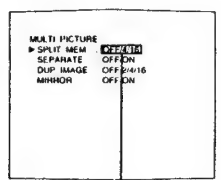
Move the cursor to MULTI PIX by pressing the ∧ or ∨ button.

3 Press the > button.
The right screen appears.

MULTI PICTURE sub menu



4 Set the memory mode.
① Select the item to be set by pressing the ∧ or ∨ button.
② Select the method for storing images by pressing the < or > button.



Switch the desired mode to green by pressing the < or > button.

Item for memory mode	When you select	Settings	Contents of setting
SPLIT MEM	To set the number of images to be stored in one memory page.	OFF	Storing a full-size image
		4	Storing four reduced images
		16	Storing 16 reduced images

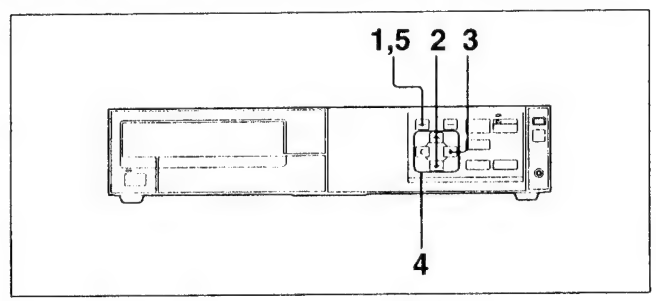
5 Press the MENU button.
The regular screen appears.

Selecting the Print Mode

You can make variations of printouts from the images stored in memory pages by changing the print mode. (see "Types of printouts that the printer can produce" page 21)
Once you have selected the print mode, this setting remains as is until you reset, even if you turn the power off.

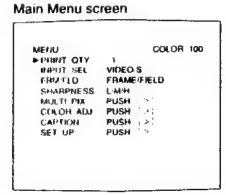
To control the printer remotely by using the remote control unit (supplied)

You can access the MULTI PICTURE sub menu by pressing the MULTI PICTURE button. Thus, press the MULTI PICTURE button to display the MULTI PICTURE sub menu. Then, follow the procedure below, starting from step 4.

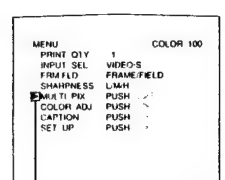


1 Press the MENU button.
The right screen appears.

Main Menu screen



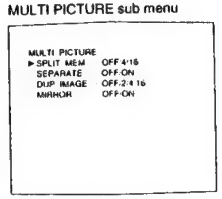
2 Select MULTI PIX by pressing the ∧ or ∨ button.



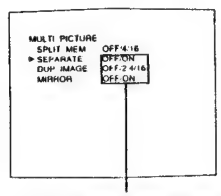
Move the cursor to MULTI PIX by pressing the ∧ or ∨ button.

3 Press the > button.
The right screen appears.

MULTI PICTURE sub menu



4 Set the print mode.
① Select the item to be set by pressing the ∧ or ∨ button.
② Select the method for making a printout by pressing the< or > button.



Switch the desired mode to green by pressing the < or > button.

Item for memory mode	When you select	Settings	Content of settings
SEPARATE	To decide whether the images are printed with white borders	OFF	without white borders
		ON	with white borders
DUP IMAGE	To decide how many times identical images are printed in a single printout.	OFF	Printing a memory image one time
		2	Printing a memory image twice.
		4	Printing a memory image four times
		16	Printing a memory image 16 times.
MIRROR	To rotate the image around its vertical axis (to make a mirror image printout)	OFF	Normal image
		ON	Mirror image

Note
When MIR is selected on the CAPTION sub menu, MIRROR is not selected.

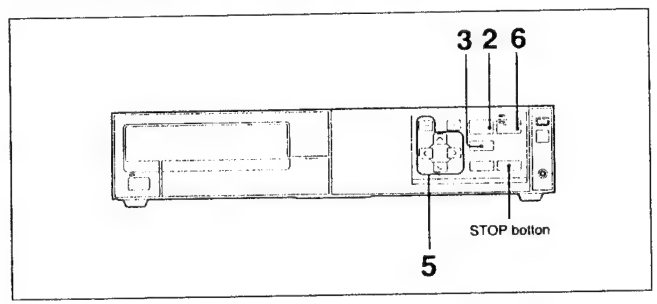
5 Press the MENU button.
The regular screen appears.

To return to the main menu from the sub menu screen
Press the EXEC button except when the SAVE item is selected on the COLOR ADJUST sub menu and when the cursor is position in the character entry area on the CAPTION sub menu.

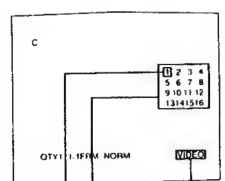
Making Printouts of Multiple Images

This subsection explains how to make printouts of reduced multiple images taking as an example, making a printout of 16 reduced images. (see "Selecting the Print Mode" page 28)

Before making printouts of 16 reduced images
- Set the memory mode to store 16 reduced images into memory. (see page 27)
- Select the appropriate memory page. (see page 25)



1 Start the video source.
(This operation is done using the controls of the video equipment acting as the source.)

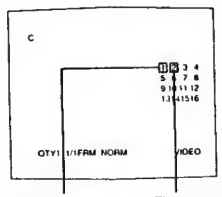


Shows that the images from the video equipment is displayed on the screen.

Appear when the memory mode is set to store 16 reduced images

Blinks: A image will be stored in this number from now.

2 Press the MEMORY IN button at the instant when the image you want to print appears on the screen.
The image is stored to the position for which the corresponding number blinks on the monitor display.
The cursor moves to the next number, then blinks.



When an image has been stored into this position, the number lights in green.

The cursor moves to the next number.

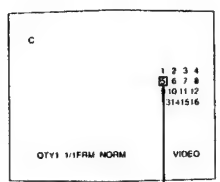
3 Press the SOURCE/MEMORY button.
The image from the video equipment appears on the monitor display.

4 Repeat steps 2 and 3 until you have stored 16 images.

To change a stored image

Example: When you want to change the image stored to the 5th position

① Select 5 by pressing the ∧, ∨, < or > button.
② Press the SOURCE/MEMORY button.
The image from the video source appears.
③ Press the MEMORY IN button at the instant when the image you want to print appears.
The previously stored image is replaced with the newly selected image.



Move the white blinking cursor to 5 by pressing the ∧, ∨, < or > button.

To skip a previously stored image

When an image has already been stored, the previously stored image can be replaced by pressing the MEMORY IN button. Skip the number corresponding to the image to be skipped by pressing the ∧, ∨, < or > button.

5 Set the print mode. (see "Selecting the Print Mode" page 28)

6 Press the PRINT button.
The 16 reduced images are printed on one sheet of paper.

To stop printing midway

Press the STOP button. The printer stops printing and ejects paper to the paper cover.

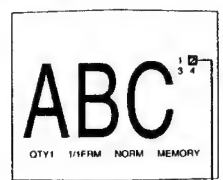
Making Printouts with an Insert

You can make printouts with an insert by using the four- or 16-reduced image memory mode.
To make printouts with an insert, select the memory to FIELD.
Example: To make a printout with one of four reduced images inserted

1 Display the full-size image stored in memory. (Follow steps 1 to 3 of "Making Full-Size Printouts" on page 14)

2 Set the memory mode to store four reduced images. (see "Selecting the Memory Mode" page 26)

3 Move the white blinking cursor to the position where a reduced image is to be inserted, by pressing the ∧, ∨, < or > button.
Example: To insert the image to 2



Move the white blinking cursor to 2.

4 Press the SOURCE/MEMORY button to display the image from the video source, if necessary.

5 Press the MEMORY IN button at the instant when the image you want to print appears.
The image is stored to position 2.

6 Press the PRINT button.
An image with the insert is printed.

Note

If you insert a reduced image into an image stored in a different memory page, the printer can not make a printout of the image with an insert.

1-7. MAKING PRINTOUTS WITH A CAPTION

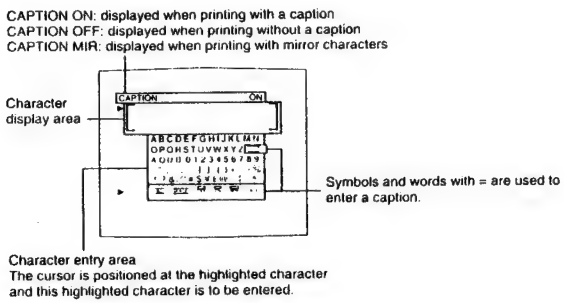
A caption, such as data or comments, can be added to a printout, using small characters below the image.
You can input up to 60 characters in NARROW size mode, NORMAL size mode, in WIDE size mode.

Note

When the printout is printed in field mode, characters may not be printed clearly.

About the CAPTION sub menu

A caption is entered from the CAPTION sub menu. A brief explanation of each item on the CAPTION sub menu, is given below before entering a caption.



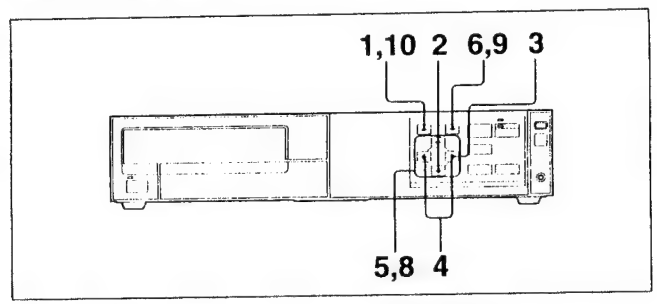
Symbols and words with = used to enter a caption.

Monitor display	Function
SPACE	One space
BS	One backspace
OFF	Selecting to print without a caption
ON	Selecting to print with a caption
MIR	Selecting to print with a mirror caption
SHIFT a)	Selecting either capital letters or lower-case letters
SAVE	Storing the entered caption

a) By highlighting SHIFT and pressing the EXEC button, capital letters are changed to lower-case letters, or lower-case letters are changed to capital letters.

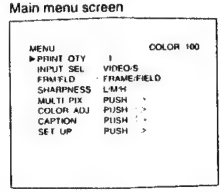
Entering a Caption

Enter a caption as follows. The setting remains valid until you enter a new setting - even if you turn the power off.

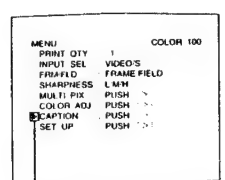


1 Press the MENU button.
The right screen appears.

Main menu screen



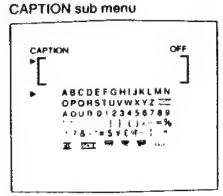
2 Select CAPTION by pressing the ∧ or ∨ button.



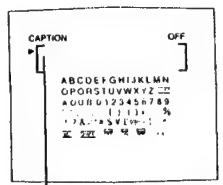
Move the cursor to CAPTION by pressing the ∧ or ∨ button.

3 Press the > button.
The right screen appears.

CAPTION sub menu

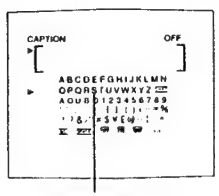


4 Select the position where you want to enter the character in the character display area by pressing the < or > button.



The cursor □ is highlighted at the selected position on the monitor display.

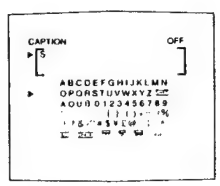
5 Select the character you want to enter by pressing the ∧, ∨, < or > button.
Example: To select S



Highlight S.

6 Press the EXEC button.

The selected character appears at the position highlighted on the character display area, then the highlighted [ ] moves to the next position.



When you enter a wrong character
Select BS by pressing the ∧, ∨, < or > buttons, then press the EXEC button. The character to the left of highlighted character will be deleted.

7 Repeat steps 4, 5 and 6 to enter the remaining characters of the caption.

To make a space
① Move the highlighted [ ] to the position where you want to make a space.
② Select SPACE by pressing the ∧, ∨ , < or > button.
③ Press the EXEC button.
The one space is made and the cursor moves to the next position.

Continue to next page →

To replace a previously entered character without changing the number of characters
You can replace a previously entered character with a new one.
① Move the cursor to the character which you want to replace by the operation in step 4.
② Enter the correct character over the wrong character by the operations in step 5 and 6.
The previously entered character is replaced with the new one.

8 Select SAVE by pressing the ∧, ∨, < or > button.


Highlight SAVE.

9 Press the EXEC button.
The message "PLEASE WAIT" appears while the entered characters are being stored. Once they have been stored, the message disappears and the CAPTION sub menu appears again.

10 Press the MENU button.
The regular screen appears.

Note
The message "PLEASE WAIT" appears when it is not allowed to operate the printer or to operate the printer remotely by using the remote commander. Do not operate the printer while "PLEASE WAIT" is being displayed.

If "PLEASE WAIT" does not disappear
If "PLEASE WAIT" remains on the screen, turn the printer power off once and turn the printer power on again. You can operate the printer.

Making printouts with a caption

Display the CAPTION input screen. (see "Entering a Caption" page 34)

1 Select ON by pressing the ∧, ∨, < or > button.

2 Press the EXEC button.


Highlight ON.

Making a printouts without a caption
Select OFF in the above step 1.

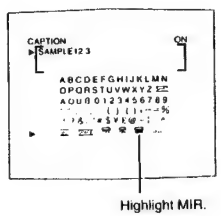
Making a printout with a mirror caption

Display the CAPTION input screen. (see "Entering a Caption" page 32)

Note

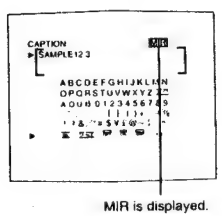
To select MIR on the CAPTION sub menu, the setting of MIRROR on the MULTI PICTURE sub menu should be set to MIRROR ON. Otherwise, if you select MIR on the CAPTION sub menu with setting to MIRROR OFF on the MULTI PICTURE sub menu, error tone sounds three times.

1 Select MIR by pressing the ∧, ∨, < or > button.



Highlight MIR.

2 Press the EXEC button.



MIR is displayed.

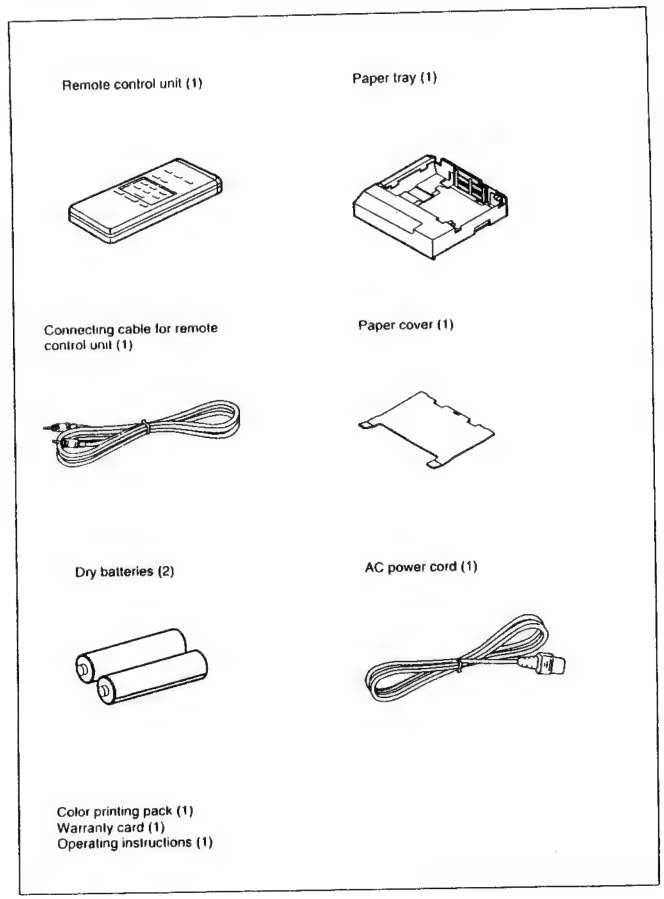
To return the print mode to the one with normal caption

① Select ON by pressing the ∧, ∨, < or > button.
② Press the EXEC button.

To return to the regular screen

Press the MENU button.

1-8. SUPPLIED ACCESSORIES



1-9. CONNECTIONS UP-1200A

To enable printing, video equipment to act as an input signal source, and a video monitor to enable you to view images or menus, must be connected. The following diagrams illustrate how to make the input, output and remote control connections. Use as a guide when connecting the necessary signals to and from the equipment to be used for printing.

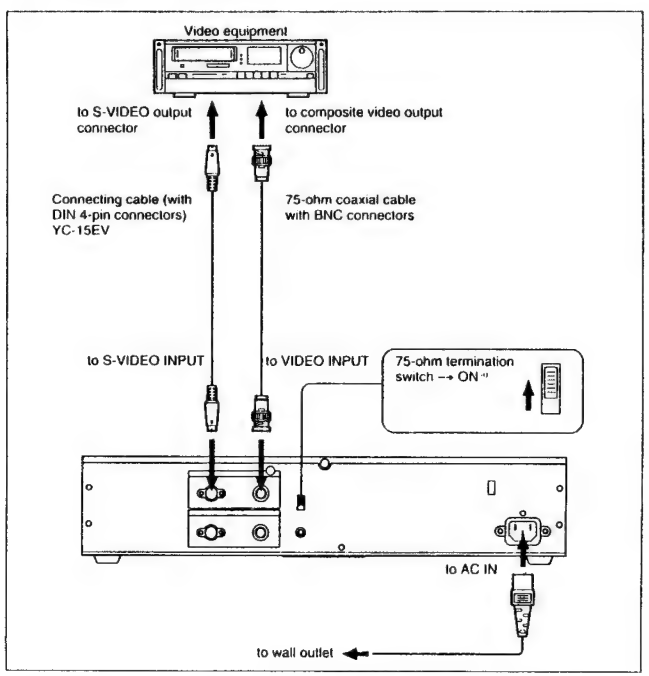
Notes

When connecting:

- Turn off the power of each device before attempting to make any connections.
- Connect the AC power cord last.

Making Connections for Storing Video Images

Connect the video equipment for storing the video images to be printed.
Connect the necessary video equipment which will be used in actual printing, using the following diagram as a guide.



a) Normally, set this switch to ON. Set it to OFF if the level of the input signal drops if you connect additional video equipment.

UP-1200AEPM

To enable printing, video equipment to act as an input signal source, and a video monitor to enable you to view images or menus, must be connected. The following diagrams illustrate how to make the input, output and remote control connections. Use as a guide when connecting the necessary signals to and from the equipment to be used for printing.

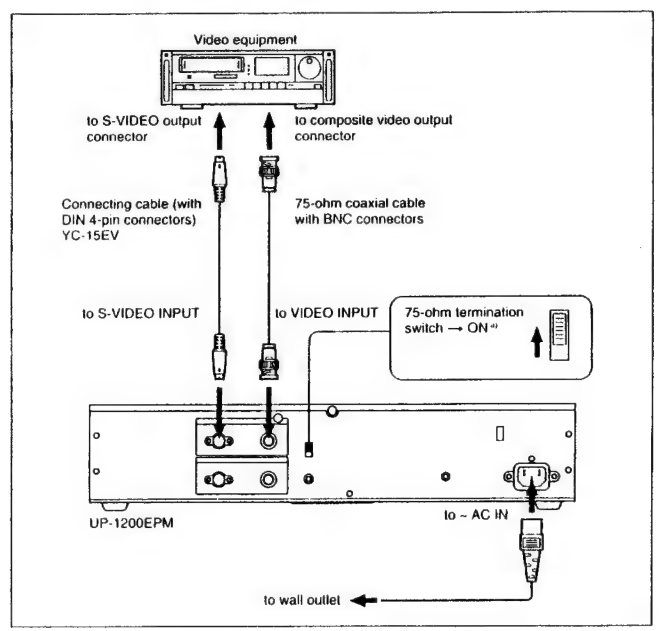
Notes

When connecting:

- Turn off the power of each device before attempting to make any connections.
- Connect the AC power cord last.

Making Connections for Storing Video Images

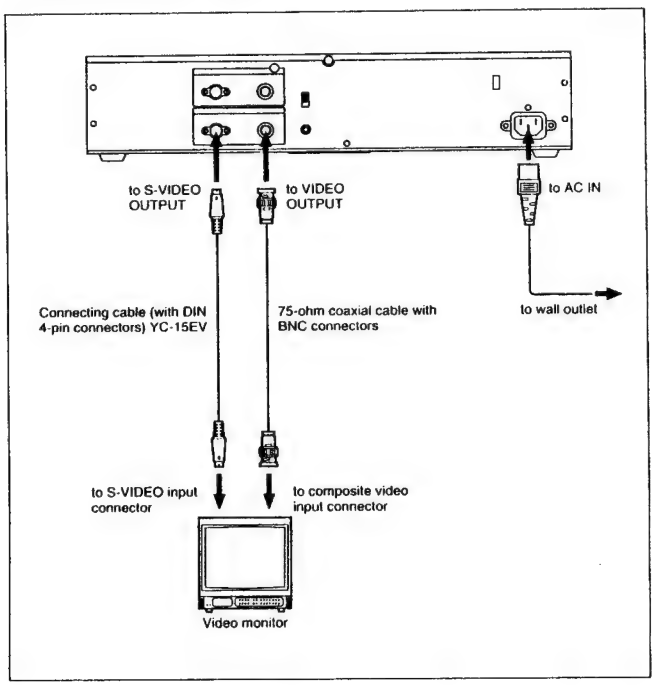
Connect the video equipment for storing the video images to be printed.
Connect the necessary video equipment which will be used in actual printing, using the following diagram as a guide.
Before connecting the video equipment, see "Important safeguards/notices for use in the medical environment" on page 2.



a) Normally, set this switch to ON. Set it to OFF if the level of the input signal drops when you connect additional video equipment.

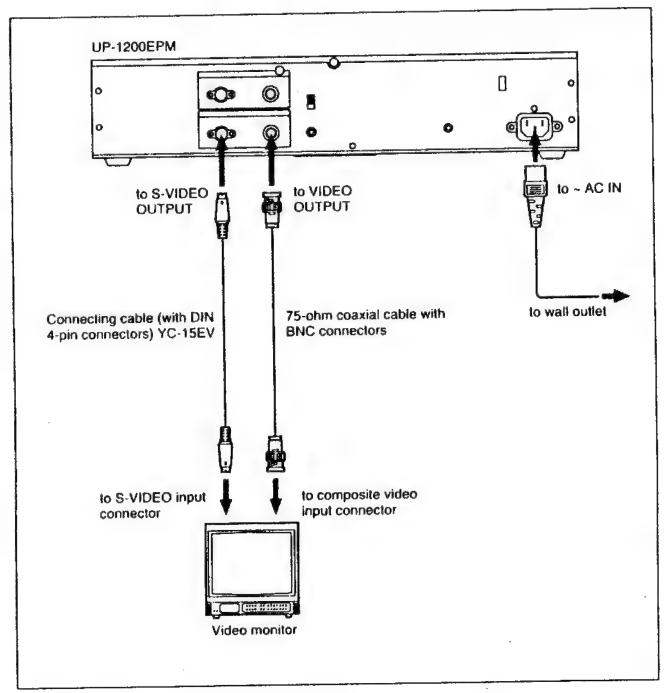
Making Connections for Viewing Images to be Printed on the Video Monitor

Connect a video monitor to view stored images and to check those to be printed. Connect the necessary video monitor which will be used in actual printing, using the following diagram as a guide.



Making Connections for Viewing Images to be Printed on the Video Monitor

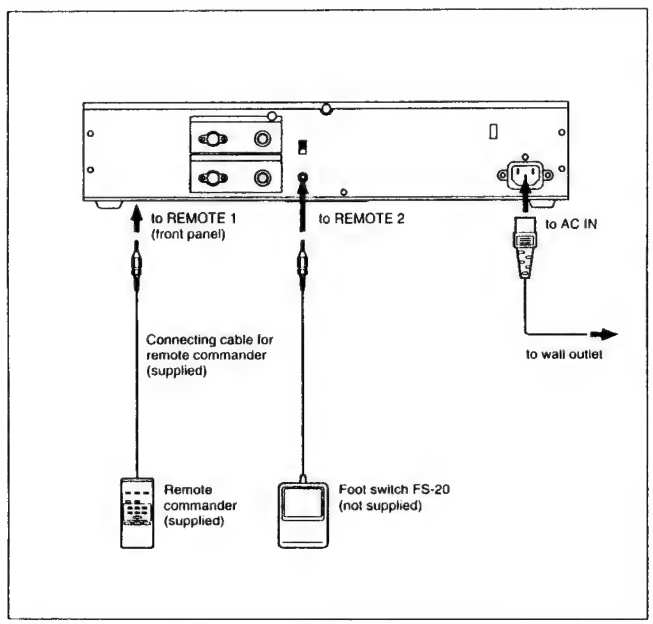
Connect a video monitor to view stored images and to check those to be printed. Connect the necessary video monitor which will be used in actual printing, using the following diagram as a guide.
Before connecting the video monitor, see "Important safeguards/notices for use in the medical environment" on page 2.



UP-1200A

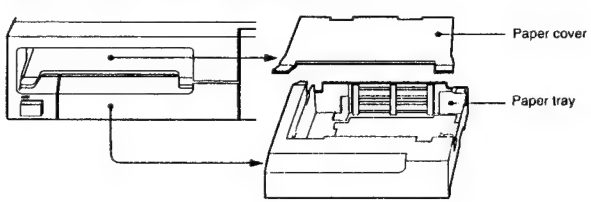
Making Connections to Enable Remote Control

The printer can be controlled remotely by connecting the remote commander (supplied) or foot-switch (not supplied) (see "Preparing the Remote Commander" page 42).



Assembly

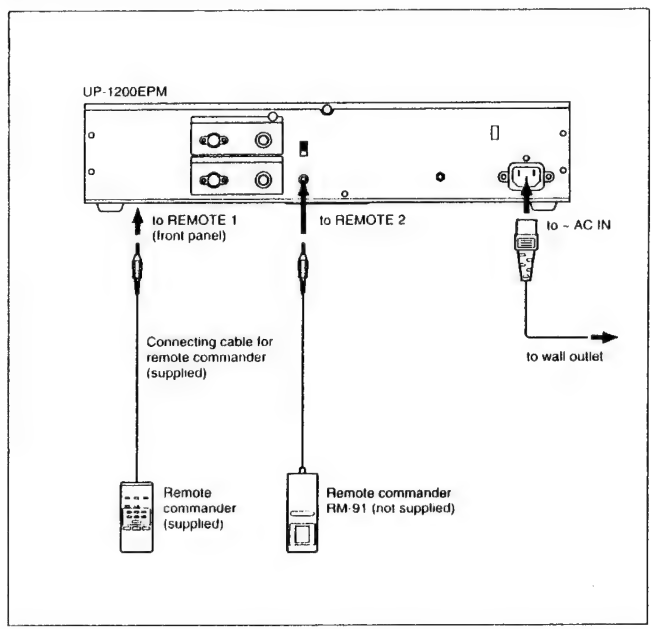
Mount the supplied paper tray and paper cover.



UP-1200AEPM

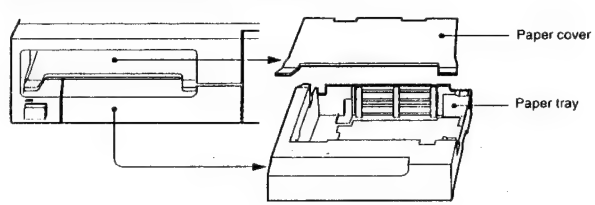
Making Connections to Enable Remote Control

The printer can be controlled remotely by connecting the remote commander (supplied) or the RM-91 remote commander (not supplied) (see "Preparing the Remote Control Units" page 42).



Assembly

Mount the supplied paper tray and paper cover.



1-10. PREPARING THE REMOTE COMMANDERS UP-1200A

You can control the printer remotely by using the remote control unit (supplied) or the foot switch (not supplied).

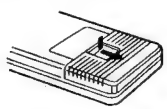
Using the Supplied Remote Commander

The remote control unit can be used either as a wireless type or wired type. The buttons on the remote control unit duplicate those on the front panel of the printer, except for the PRINT QTY button, COLOR ADJUST button and MULTI PICTURE button. (see "Remote Commander" page 72)

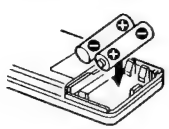
Inserting batteries

Install the batteries in the remote commander before using it.

1 Remove the battery compartment cover.



2 Insert the two supplied SUM-3 1.5 V batteries.
Note the polarity. Be careful to insert the batteries correctly.



3 Replace the cover.

Battery life
The battery life depends on how much you use the remote control unit. On average, batteries last for about 6 months. Install fresh batteries as soon as you notice the unit's range becoming shorter.

Notes
When using the batteries:
- Remove the batteries from the remote control unit if you do not intend to use it for an extended period of time. The batteries may leak if you leave them in the remote control unit.
- Should the batteries leak, clean the battery case thoroughly with a soft cloth and install fresh batteries.
- Be careful to insert the batteries correctly. Note the polarity, as indicated inside the battery compartment.
- Replace exhausted batteries with fresh ones. Never mix a fresh battery with a used battery or with a different kind of battery.

UP-1200AEPM

You can control the printer remotely by using the remote commander (supplied) or the remote commander (not supplied).

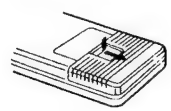
Using the Supplied Remote Commander RM-5100

The remote commander can be used either as a wireless type or wired type. The buttons on the remote commander duplicate those on the front panel of the printer, except for the PRINT QTY button, COLOR ADJUST button and MULTI PICTURE button. (see "Remote Commander RM-5100" page 72)

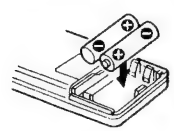
Inserting batteries

Install the batteries in the remote commander before using it.

1 Remove the battery compartment cover.



2 Insert the two supplied 1.5 V batteries (R6).
Note the polarity. Be careful to insert the batteries correctly.



3 Replace the cover.

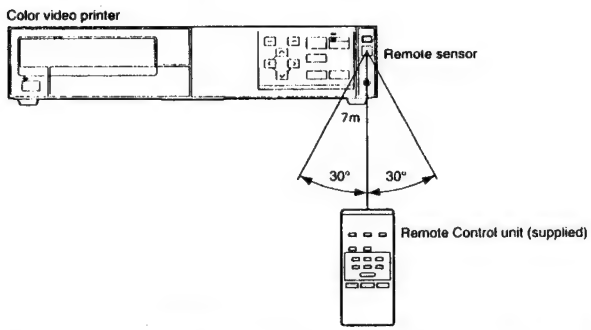
Battery life
The battery life depends on how much you use the remote commander. On average, batteries last for about 6 months. Install fresh batteries as soon as you notice the unit's range becoming shorter.

Notes
When using the batteries:
- Remove the batteries from the remote commander if you do not intend to use it for an extended period of time. The batteries may leak if you leave them in the remote control unit.
- Should the batteries leak, clean the battery case thoroughly with a soft cloth and install fresh batteries.
- Be careful to insert the batteries correctly. Note the polarity, as indicated inside the battery compartment.
- Replace exhausted batteries with fresh ones. Never mix a fresh battery with a used battery or with a different kind of battery.

UP-1200A

Using the supplied remote control unit

When using the remote control unit as a wireless unit, aim the head of the remote control unit of the remote sensor on the printer. With fresh batteries, the range of the remote control unit is about 7 meters.



Using the Foot Switch

The foot switch (not supplied) allows you to make prints free-handed.

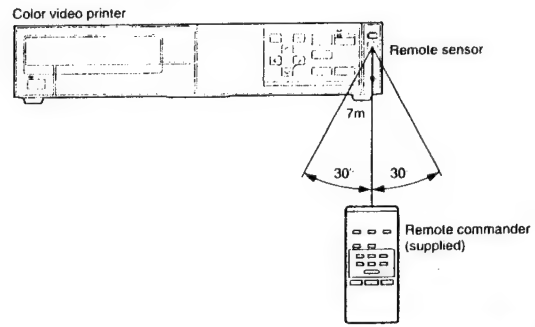
Operation

At the instant when the image you want to print is displayed on the monitor, press the foot switch. The subsequent operation of the printer will depend on the remote operation setting with the corresponding menu. (see "Selecting Operation Mode for Automatic Printing Capabilities" page 54) The printer operation, also, can be controlled remotely by sending a pulse signal to the REMOTE 2 connector. (see "Specifications" page 65)

UP-1200AEPM

Using the supplied remote commander

When using the remote commander as a wireless unit, aim the head of the remote control unit of the remote sensor on the printer. With fresh batteries, the range of the remote commander is about 7 meters.



Using the Remote Commander (Not Supplied)

The RM-91 remote commander (not supplied) allows you to make printouts remotely.

Operation

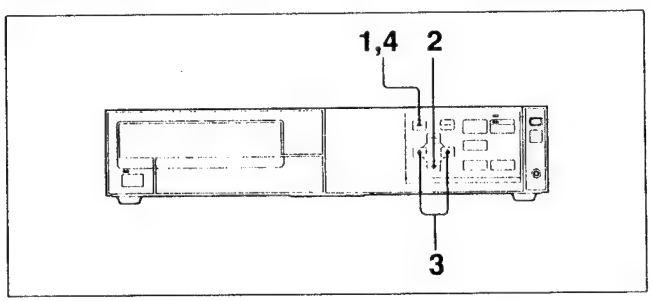
At the instant when the image you want to print is displayed on the monitor, press the switch of the remote commander. The subsequent operation of the printer will depend on the remote operation setting with the corresponding menu. (see "Selecting the Operation Mode for Automatic Printing Capabilities" page 54) The printer operation, also, can be controlled remotely by sending a pulse signal to the REMOTE 2 connector. (see "Specifications" page 65)

1-11. ADJUSTING THE PRINTOUT QUALITY

You can adjust the printout quality, including its sharpness and color (intensity and contrast) and store these settings by using the menu. The setting remains as is until reset - even if you turn off the power.

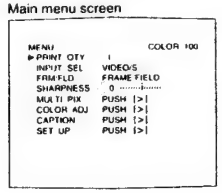
Adjusting the Sharpness

You can set the printout sharpness to one of 16 levels. A printout will appear softer or sharper depending on the definition of the subject outline. The image on the monitor is not affected by changing the sharpness setting. This adjustment affect only the quality of the printout. The setting remains as is until reset - even if you turn off the power.

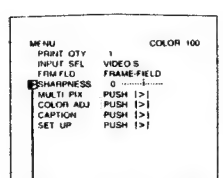


1 Press the MENU button.
The right screen appears.

Main menu screen



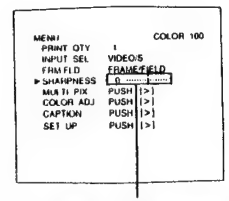
2 Select SHARPNESS by pressing the ∧ or ∨ button.



Move the cursor to SHARPNESS by pressing the ∧ or ∨ button.

3 Select desired sharpness by pressing the < or > button.

Desired sharpness	Direction
Soft outline	to the – direction
Normal outline	Centered (0 position)
Sharp outline	to the + direction



The number and the corresponding sharpness increases by pressing the > button.
The number and the corresponding sharpness decreases by pressing the < button.

4 Press the MENU button.
The regular screen appears.

Adjusting the Printout Color

This subsection explains how to adjust the printout color.
You can adjust the color intensity (RED/GREEN/BLUE) and contrast (DARK/LIGHT). The new setting remains as is until reset - even if you turn off the power.

You can store up to three settings. These settings are managed according to a LOAD number. The color intensity and picture contrast of a printout are determined by recalling one of the three settings according to their LOAD numbers. The printer retains these settings even if you turn off the power.
This is useful when you are using more than one video equipment, each of a different quality, and when you want to print images having different color qualities and picture contrasts.
Also, you can make a printout using temporarily set values, without erasing the stored adjustment values.
Perform the adjustments while viewing the images stored in memory.

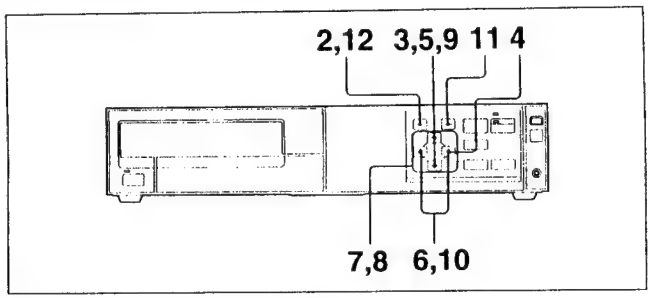
Factory-set values of LOAD numbers 1, 2 and 3 in the COLOR ADJUST sub menu

For UP-1200, all values are factory-set to 0 for LOAD numbers 1, 2 and 3.
For UP-1200A, all values are factory-set to 0 for LOAD numbers 1 and 3. Values for LOAD number 2, however, are factory-set as follows: RED is set to –3, GREEN to –3, BLUE to –3, DARK to +3 and LIGHT to 0. By selecting LOAD number 2 under the factory-setting, you can make a printout in the same printout color as the one of the UP-1200 where RED, GREEN, BLUE, DARK and LIGHT are set to 0.

When you control the printer using the remote control unit (supplied)

You can directly access the COLOR ADJUST sub menu from the regular screen by pressing the COLOR ADJUST button. Therefore, press the COLOR ADJUST button first. Then, perform the operation from step 5 of the following procedure.

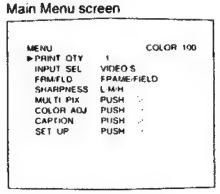
Continue to next page →



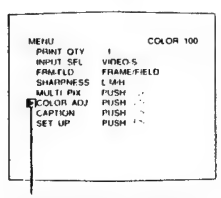
1 Display the image stored in monitor for adjustment.

2 Press the MENU button.
The right screen appears.

Main Menu screen



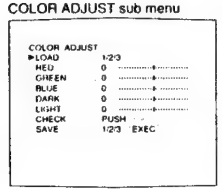
3 Select COLOR ADJ by pressing the ∧ or ∨ button.



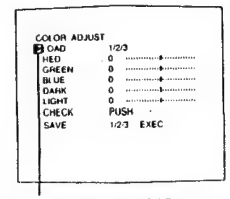
Move the cursor to COLOR ADJ by pressing the ∧ or ∨ button.

4 Press the > button.
The right screen appears.

COLOR ADJUST sub menu



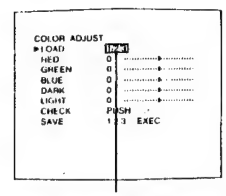
5 Select LOAD by pressing the ∧ or ∨ button.



Move the cursor to LOAD by pressing the ∧ or ∨ button.

6 Select the LOAD number of the value to be adjusted or to be modified by pressing the < or > button.

When modifying, you can preserve the original settings. (see "To preserve the original set value" page 47)



Switch the desired LOAD number to green by pressing the < or > button

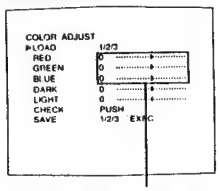
7 Adjust the printout color.
① Select the item to be set by pressing the ∧ or ∨ button.
② Perform the adjustment by pressing the < or > button.

Adjustment item		Contents of setting
Color intensity	RED	Adjusting the red component of the image
	GREEN	Adjusting the green component of the image
	BLUE	Adjusting the blue component of the image
Color contrast	DARK	Adjusting the dark area of an image
	LIGHT	Adjusting the light area of an image

The RED, GREEN and BLUE color components and the contrast are divided into to 16 scales from –8 to +7, as indicated by a value and graph. And the center of the graph corresponds to the standard color.

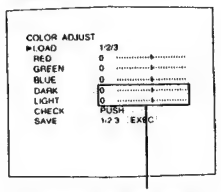
Continue to next page →

When adjusting RED/ GREEN/BLUE



The intensity increases in the + direction by pressing the > button. The intensity decreases in the – direction by pressing the < button.

When adjusting DARK/ LIGHT



The contrast in the dark area or light area is strengthened in the + direction by pressing the > button. The contract in the dark area or light area is weakened in the – direction by pressing the < button.

Once you have changed the value

Once you have changed the value, TEMP (TEMPORARY) appears to the right of the LOAD item. TEMP indicates that the setting is temporary and not stored.

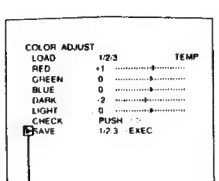
8 After you have made all necessary adjustments, check your presettings.

① Select CHECK by pressing the ∧ or ∨ button.

② Press the > button.
For as long as you keep the > button held down, the display does not appear on the screen.

You can make a printout with the settings made as above. Go to step 12 to make a printout. However, this setting is cleared when you turn the printer off or you select another preset. To store a new setting, go to the next step.

9 Select SAVE by pressing the ∧ or ∨ button.

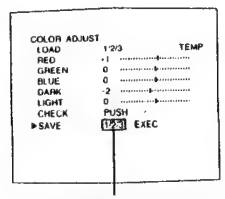


Move the cursor to SAVE by pressing the ∧ or ∨ button.

10 Select the SAVE number to which new settings are to be stored by pressisng the < or > button.

To preserve the original set value

Select the SAVE number which differs from the LOAD number selected in step 6.



Switch the desired SAVE number to green by pressing the < or > button.

11 Press the EXEC button.
The settings have been registered to the SAVE number selected in step 10.
TEMP disappears from the LOAD item.

12 Press the MENU button.
The regular screen appears.

To recall settings

You can recall previously set values by selecting the LOAD number. The values are stored to SAVE numbers in steps 10 and 11. This SAVE number is the LOAD number for this setting.

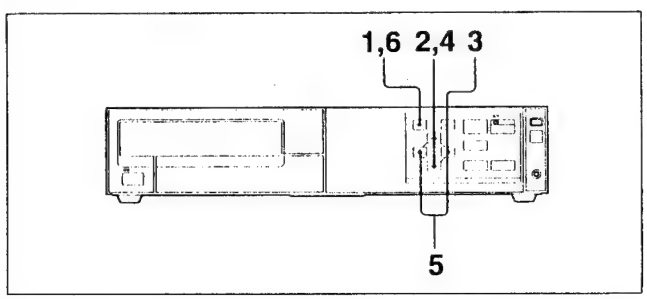
1-12. PRINTER INITIAL SETUP

You can set up the following, using the on-screen menu.

- Setting the printout size (see page 50)
- Changing the printout area (see page 52)
- Selecting the operation mode for automatic printing capabilities (see page 54)
- Erasing the screen display (see page 56)
- Viewing images from connected video equipment on the video monitor (see page 58)
- Selecting images on the video monitor after storing the video image into memory (see page 60)

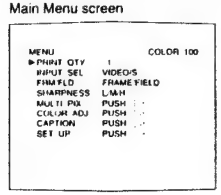
Setting the Printout Size

When you print an image that is narrower or wider than the standard screen size, the black frame may be printed or the image may be partially cut. In such a case, you can change the screen size.
The printer supports the following three sizes, NA (NARROW), NO (NORMAL) and W (WIDE).

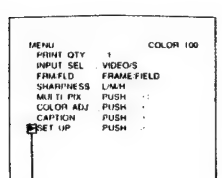


1 Press the MENU button.
The right screen appears.

Main Menu screen



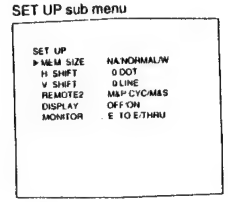
2 Select SET UP by pressing the ∧ or ∨ button.



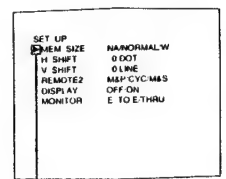
Move the cursor to SET UP by pressing the ∧ or ∨ button.

3 Press the > button.
The right screen appears.

SET UP sub menu

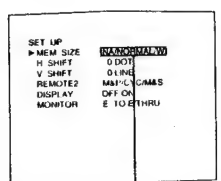


4 Select MEM SIZE by pressing the ∧ or ∨ buttons.



Move the cursor MEM SIZE by pressing the ∧ or ∨ button.

5 Select the desired size by pressing the < or > buttons.



Switch he selected size to green. The selected size appears in green.

When changing	Printout size	Size (dots × line)
When a black frame is printed.	NA (NARROW)	708 (H) × 448 (V)
Normal	NO (NORMAL)	720 (H) × 472 (V)
When an image is partially cut	W (WIDE)	772 (H) × 488 (V)

6 Press the MENU button.
The regular screen appears.

Note

To change the printout size, turn the power off after removing from the SET UP sub menu (after completing step 6 in the above operation procedures). If you keep the power on, the former setting remains.

To check the adjustment result

Store a new image to the memory and print it to check whether the black frame disappears.

Changing the Printout Area

The black line may be printed on the printout although it does not appear on the video monitor. The portion where no video signal exists is printed in black. This may occur when you make printouts after you connect a different video source or play back different video software.
In such a case, you can adjust the printout area by moving the screen horizontally and vertically.

When the black line is on the right

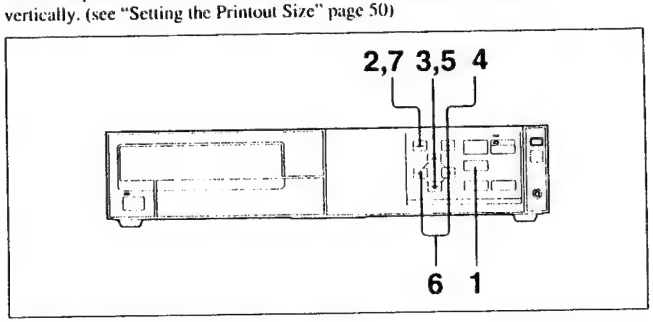
When the black line is on the left

When the black line is at the top

When the black line is at the bottom

Note

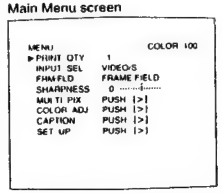
When the printout size is set to WIDE, the screen size cannot be adjusted vertically. (see "Setting the Printout Size" page 50)



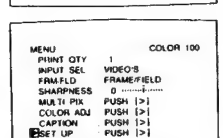
1 When the memory image is displayed on the screen, press the SOURCE/MEMORY button.
The image from the video source appears.

2 Press the MENU button.
The right screen appears.

Main Menu screen



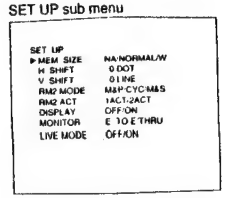
3 Select SET UP by pressing the ∧ or ∨ button.



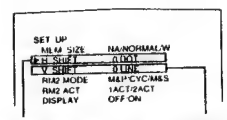
Move the cursor to SET UP by pressing the ∧ or ∨ button.

4 Press the > button.
The right screen appears.

SET UP sub menu



5 Select H SHIFT by pressing the ∧ or ∨ buttons, when the black line appears on the right or left.
Select V SHIFT by pressing the ∧ or ∨ buttons, when the black line is at the top or bottom.



When the black line is on the right or left

When the black line is at the top or at the bottom

6 Adjust the horizontal value or vertical value by pressing the < or > button.

Item selected in step 5	The position where the black line appears	Button to be used	Operation
H SHIFT (horizontal direction)	On the right	> button	Shifting the image to the right by up to 14 dots in step 2 dots
	On the left	< button	Shifting the image to the left by up to 14 dots in step 2 dots
V SHIFT (vertical direction)	At the top	> button	In frame mode, shifting the image up by up to 6 lines in step 2 lines In field mode, shifting the image up by up to 3 lines in step 1 line.
	At the bottom	< button	In frame mode, shifting the image down by up to 6 lines in step 2 lines In field mode, shifting the image down by up to 3 lines in step 1 line.

7 Press the MENU button.
The regular screen appears.

To check the adjustment result

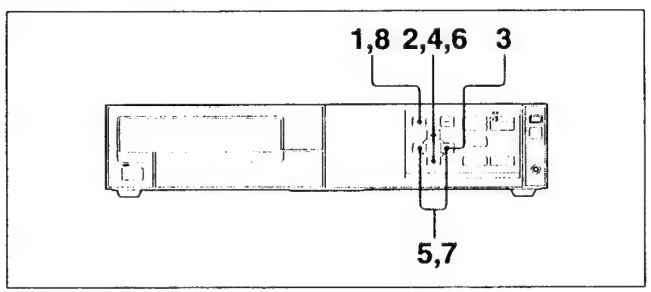
Any black line is also stored in memory with the previous image. Thus, store a new image to the memory and print it to check whether the black line disappears.

Note

When a black line still remains even after adjusting H SHIFT or V SHIFT, change the printout size. (see "Setting the Printout Size" page 50)

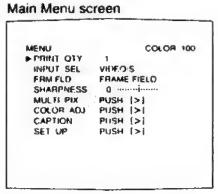
Selecting the Operation Mode for Automatic Printing Capabilities

You can control the printer with the RM-91 remote commander connected to the REMOTE 2 connector on the rear panel.
In addition to the above, the printer can be remotely controlled by the pulse signal input to REMOTE 2. (see page 65)

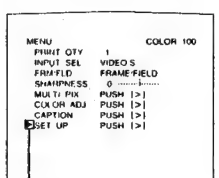


1 Press the MENU button.
The right screen appears.

Main Menu screen



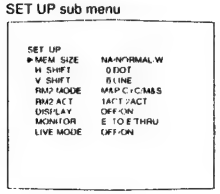
2 Select SET UP by pressing the ∧ or ∨ button.



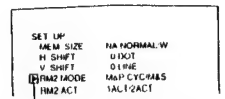
Move the cursor to SET UP by pressing the ∧ or ∨ button.

3 Press the > button.
The right screen appears.

SET UP sub menu

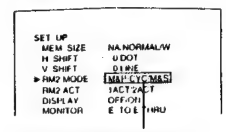


4 Select RM2 MODE by pressing the ∧ or ∨ button.



Move the cursor to RM2 MODE by pressing the ∧ or ∨ button.

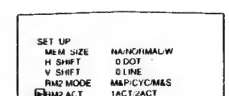
5 Select the desired operation method by pressing the < or > button.



Switch the desired operation method to green.

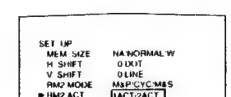
Type of control operation	Operation method
M & P (MEMORY & PRINT)	Storing an image into memory page and printing memory image. When you have selected the field mode: when the printer start printing, an image is queued and printed as soon as the current printing job has been completed.
CYC (CYCLIC MEMORY)	Storing images to memory page cyclically whenever you press the switch of the remote commander. The printer continues to store images, replacing previously stored images with the new one.
M & S (MEMORY & STOP)	Storing an image to memory page whenever you press the switch of the remote commander. The printer stops storing images to memory page once images have been stored to all memory pages. The Message STOP STOP STOP appears.

6 Select RM2 ACT by pressing the ∧ or ∨ button.



Move the cursor to RM2 ACT by pressing the ∧ or ∨ button.

7 Select the desired operating condition by pressing the < or > button.



Switch the desired operating condition to green.

Operating condition type	Operating condition
1ACT	Whenever you press the switch, the printer stores an image. You cannot check the image to be stored next.
2ACT	Whenever you press the switch, the printer stores an image. You can check the image to be stored next.

8 Press the MENU button.
The regular screen appears.

Continue to next page →

To make the message STOP STOP STOP disappear

When the message STOP STOP STOP is displayed on the video monitor, buttons except the STOP button become disable to operate.
Press the STOP button. The printer is reset to the normal printing mode.

Using the remote commander (not supplied) effectively

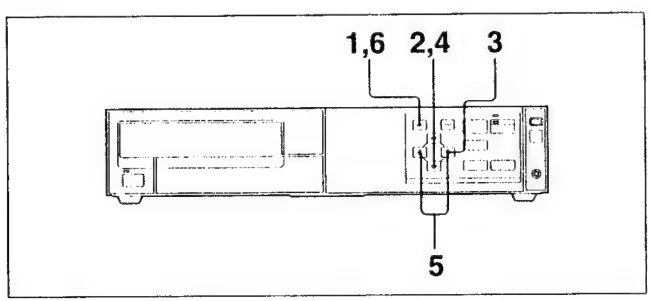
This function is effective when you store four reduced images or 16 reduced images. Whenever you press the foot switch, the image is stored into each position. For example, when M & P is selected with setting to store four reduced images, the printer stores fourth reduced image and starts to make a printout of four reduced images at fourth time foot switch pressing.

Note

If frame mode is selected, the printer does not store any image even thou you press the foot switch when the printer is printing.

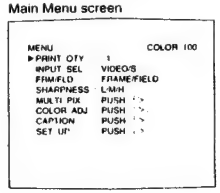
Erasing the Screen Display

You can erase a screen display with the menu, when, for example, it is hard to see the image that is hidden behind the screen display (C, QTY, VIDEO, and others). The printer operation is identical, regardless of whether messages are displayed on the screen.

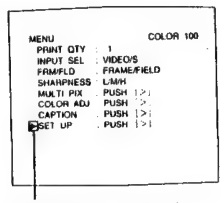


1 Press the MENU button.
The right screen appears.

Main Menu screen



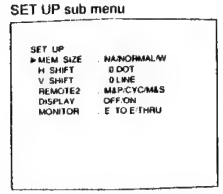
2 Select SET UP by pressing the ∧ or ∨ button.



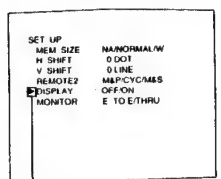
Move the cursor to SET UP by pressing the ∧ or ∨ button.

3 Press the > button.
The right screen appears.

SET UP sub menu

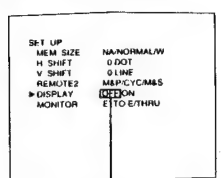


4 Select DISPLAY by pressing the ∧ or ∨ button.



Move the cursor to DISPLAY by pressing the ∧ or ∨ button.

5 Select OFF by pressing the < or > button.



Switch to green.

To display screen message

In step 5, select ON.

Note

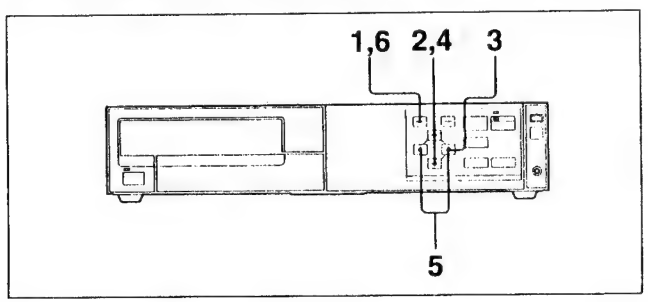
If you set the printer output signal specification to THRU (through), screen display do not appear, even when you switch ON to green.

6 Press the MENU button.
The regular screen appears.

Viewing Images from Connected Video Equipment on the Video Monitor

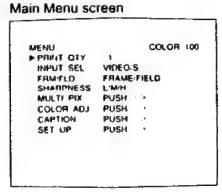
You can view images of the signals from connected video equipment without proccessed in the video printer.
The printer outputs either of two kinds of video signals according to the MONITOR setting of the SET UP menu.
E TO E: Signals are output to the monitor after being processed by the printer's circuitry
THRU (through): Signals are output to the monitor as is

At the factory, the printer is set to E TO E. By changing to THRU, you can view the image with good quality without signal-processed in the printer.

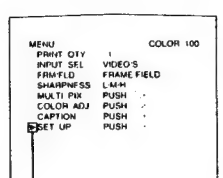


1 Press the MENU button.
The following screen appears.

Main Menu screen



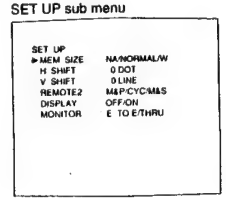
2 Select SET UP by pressing the ∧ or ∨ button.



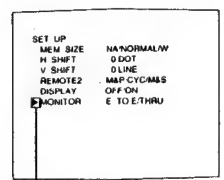
Move the cursor to SET UP by pressing the ∧ or ∨ button.

3 Press the > button.
The right screen appears.

SET UP sub menu

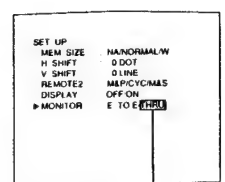


4 Select MONITOR by pressing the ∧ or ∨ button.



Move the cursor to MONITOR by pressing the ∧ or ∨ button.

5 Select THRU by pressing the < or > button.



Switch to green.

6 Press the MENU button.
The regular screen appears.
The image of the signal directly from the signal source (connected video equipment), which does not pass through the printer circuit, is displayed on the video monitor.

Note

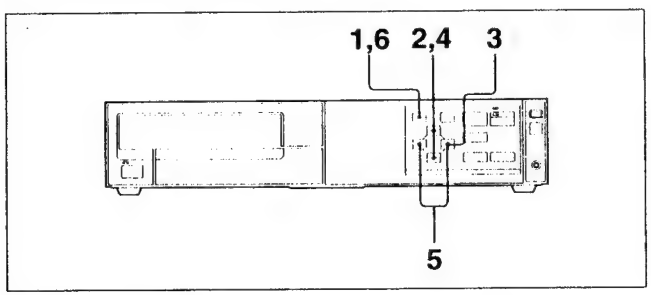
When menu or screen display appears on the video monitor, the memory image is displayed on the monitor. Display the image from the video equipment on the video monitor by pressing the SOURCE/MEMORY button.

When the color of the video monitor is not correctly adjusted

Adjust the color of the video monitor by using the monitor controls.

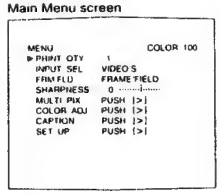
Selecting Images on the Video Monitor After Storing the Video Image into Memory

The printer displays either of two kinds of images after images are stored into memory according to the LIVE MODE setting of the SET UP sub menu.
LIVE MODE OFF: Images stored into memory (memory image)
LIVE MODE ON: Images stored into memory at the instant when the image is stored into memory, then video source image after about 1.8 seconds.
At the factory, the printer is set to LIVE MODE OFF.

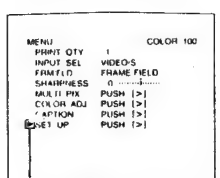


1 Press the MENU button.
The right screen appears.

Main Menu screen

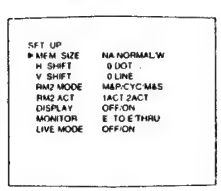


2 Select SET UP by pressing the ∧ or ∨ button.

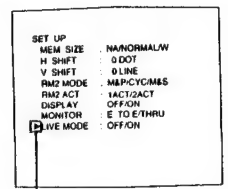


Move the cursor to SET UP by pressing the ∧ or ∨ button.

3 Press the > button.
The right screen appears.

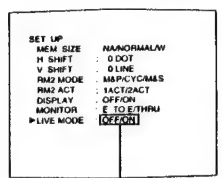


4 Select LIVE MDOE by pressing the ∧ or ∨ button.



Move the cursor to LIVE MODE by pressing the ∧ or ∨ button.

5 Select the desired image setting by pressing the < or > button.



Switch the desired image setting to green.

LIVE MODE setting	When you select
OFF	To display the memory image (stored into memory) so as to confirm it. You can display the source image by pressing the SOURCE/MEMORY button.
ON	To display the source image. The memory image is displayed at the instant when the image is stored into memory, then after about 1.8 seconds, the source image appears. This setting is effective when storing images continuously without operating the SOURCE/MEMORY button to make multiple reduced printouts.

Note

Pay attentions to the followings when you set LIVE MODE to ON.
You can not perform the following operations while the memory image is being displayed. If so, alarm tone sounds.

- Remote commander operation.
- Deleting images stored into memory.
- PRINT, MEMORY IN, SOURCE/MEMORY and MEMORY PAGE button operation.
  However, STOP button and menu control keys are operable.
- When 2ACT of RM2 ACT is selected when selecting the operation mode for automatic printing capabilities, the memory image remains on the screen even if you LIVE MODE is set to ON.

6 Press the MENU button.

1-13. ERROR MESSAGES

If a problem occurs, the ALARM lamp lights in orange and an error message and warning message stating the problem appears on the monitor. This section lists messages in alphabetical order, together with their possible causes and remedies. Note the message and act accordingly.

Error/warning message	Possible causes and remedies
CHECK RIBBON SETTING	The front panel (on the right from the user's standpoint) opens accidentally during printing. — Close the front panel. (see page 9)
FEED ERROR	The paper jams as it is being fed into the ribbon area around the paper tray. — Remove the jammed paper from the printer. (see page 67)
HEAD IN COOLING	The thermal head has overheated. — Leave the printer idle and until the head cools and this error message disappears.
NO CARTRIDGE	The ink ribbon cassette is not correctly installed. (see page 8) — Insert the ink ribbon cassette correctly.
NO PAPER	The paper has been exhausted. — Load paper. (see page 10)
PREHEATING	The thermal head is preheating. — Leave the printer until the head has preheated and this message disappears.
REMOVE PRINTS	The paper has jammed near the paper cover. — Remove the jammed paper from the printer. (see page 67)
REMOVE STUCK PAPER	The paper has jammed during printing. — Remove the jammed paper from the printer. (see page 67)
RIBBON & PAPER MISMATCH	The ink ribbon cassette and paper are not compatible. — Use a compatible cassette/paper combination. (see page 64)
RIBBON DOOR OPEN	The front panel (on the right from the user's standpoint) is open. — Close the front panel. (see page 9)
RIBBON END	The ink ribbon cassette has been exhausted. — Insert a new ribbon. (The ink ribbon cassette cannot be reused.) (see page 8)
RIBBON ERROR	An ink ribbon cassette that cannot be used with this printer has been loaded. — Insert the appropriate ink ribbon cassette. (see page 64)

If the message is not cleared, even after completing the necessary remedy

If, after completing the remedy given in "Error Message", the message is not cleared from the video monitor, turn the printer's power off, then back on again. This should allow the printer to again be operated normally.

If ERRORxx appears

If the message "ERROR xx" (xx = error number) appears, perform the following.

1 Turn off the power of the printer.

2 Remove the ink ribbon cassette, paper cover and paper tray, and check for any paper jams inside the printer.
(see "Loading an Ink Ribbon Cassette" page 8 and "Loading Paper" page 10)

If you find any jammed paper, remove it carefully.

If the ink ribbon cassette cannot be removed, or the jammed paper cannot be removed, contact your Sony service facility.

3 Insert the ink ribbon cassette, paper cover and paper tray to the printer.

4 Turn on the power of the printer.

When the message does not appear, you can use the printer as normal. However, the image stored to memory will have been cleared. Store the image to memory again.

If the same message appears again, the printer must not be operated. Turn off the power immediately and contact your Sony service facility.

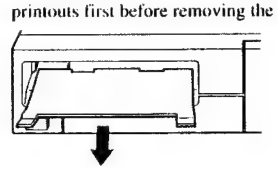
If the Paper Jams

If the paper jams as it is being fed into the ribbon area during printing, or when being fed into the paper cover area, printing stops and a message appears on the monitor, according to where the jam has occurred.

Message	Position where the paper has jammed
FEED ERROR	Before printing and being fed into the ribbon area
REMOVE STUCK PAPER	During printing, inside the printer
REMOVE PRINTS	Instantaneously before completing printing, near the paper cover

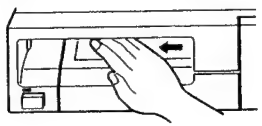
When FEED ERROR appears

1 Remove the paper cover.
When any printouts have been ejected on the paper cover, remove those printouts first before removing the paper cover.

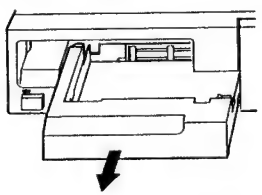


Continue to next page →

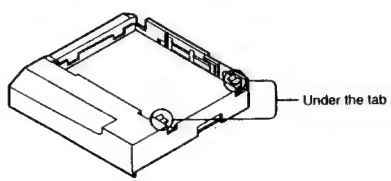
2 Check whether any paper is stuck inside the printer. If you find a jammed sheet, slowly pull it into the paper tray.



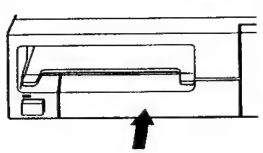
3 Remove the paper tray.



4 Load the paper into the paper tray correctly.
Discard the paper removed in step 2.



5 Slide the paper tray and paper cover back into the printer.



When REMOVE STUCK PAPER appears

Perform the same operation as that performed when FEED ERROR appears. When you cannot remove the jammed paper, remove the ink ribbon cassette too. If you find a jammed sheet inside the printer, remove it carefully.

When REMOVE PRINTS appears

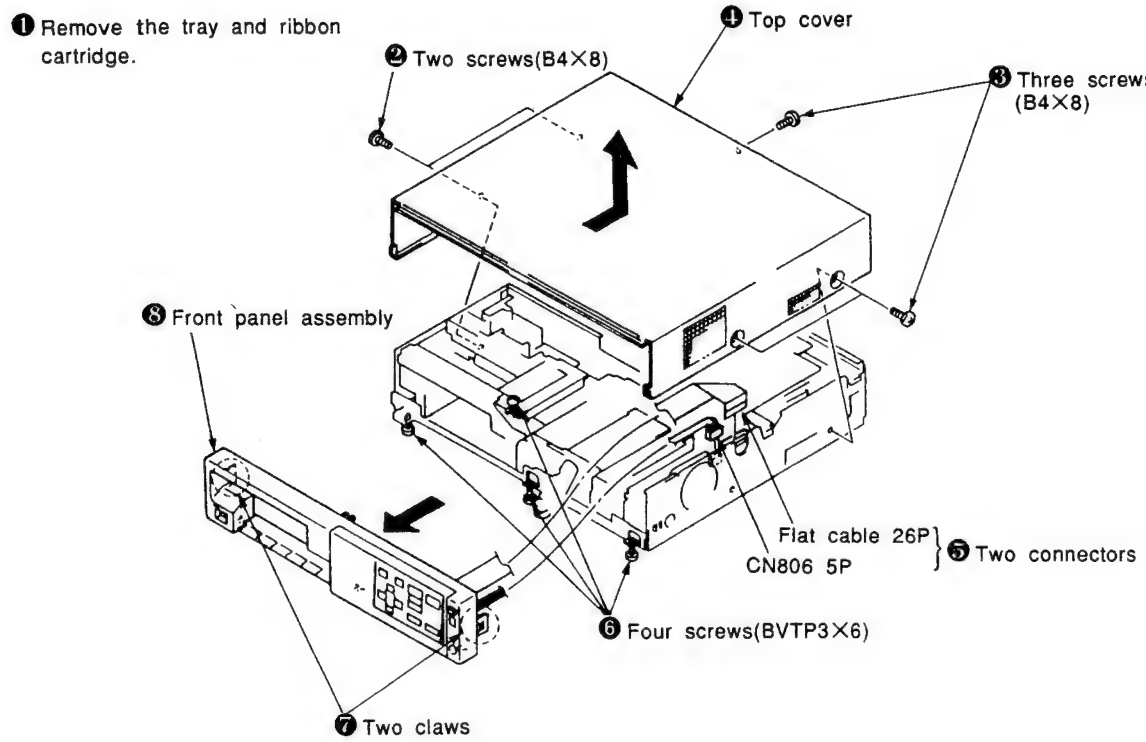
Carefully remove the jammed paper from near the paper cover.

1-14. TROUBLESHOOTING

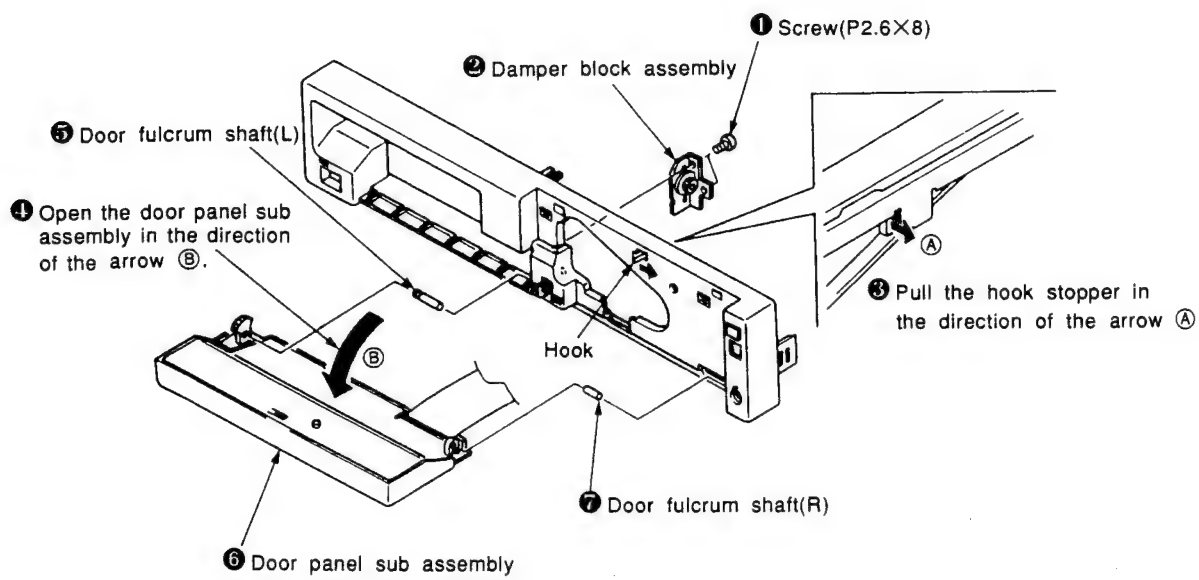
Symptom	Possible causes and remedies
Nothing appears on the monitor.	• The POWER switch of the printer is not set to ON. → Set the POWER switch of the printer to ON. • The POWER switch of the monitor is not set to ON. → Set the POWER switch of the monitor to ON. • Connections may not be correct. → Make connections correctly. (see page 39)
Any message does not appear on the regular screen.	If an incorrect sync signal is input, nothing may appear on the monitor. → In this case, check the monitor first by pressing the SOURCE/MEMORY button to display the image stored in memory. If an image appears, the monitor is working correctly. Change the INPUT SELECT settings on the menu screen. (see page 12) Or, set the connected video equipment to playback mode, if it is in another mode such as stop mode.
Any message and image do not appear on the regular screen.	If an image stored in memory appears when the SOURCE/MEMORY button is pressed, the MONITOR settings on the SET UP sub menu is set to THRU. Change the MONITOR settings to E TO E. (see page 59)
The printer does not print.	An error message appears on the display. (see page 66)
A black line appears on the printout.	A portion corresponding to there being no signal is printed in black. → Shift the printout area. (see page 52) Store a new image and print it.
The printer makes a printout with black frame.	A portion corresponding to there being no signal is printed in black. → Change the printout size a to make it narrow. (see page 50) Store a new image and print it.
The printed image is partially cut out.	Only a part of video signal has been stored. → Change the printout size to make it wide. (see page 50) Store a new image and print it.
A caption is not printed clearly.	Printed in field mode. → Store the image in frame mode and print it in frame mode.
The printout is blurred.	The quickly moving image has been stored in frame mode. → Change the mode to field mode, then print it again.

SECTION 2
DISASSEMBLY

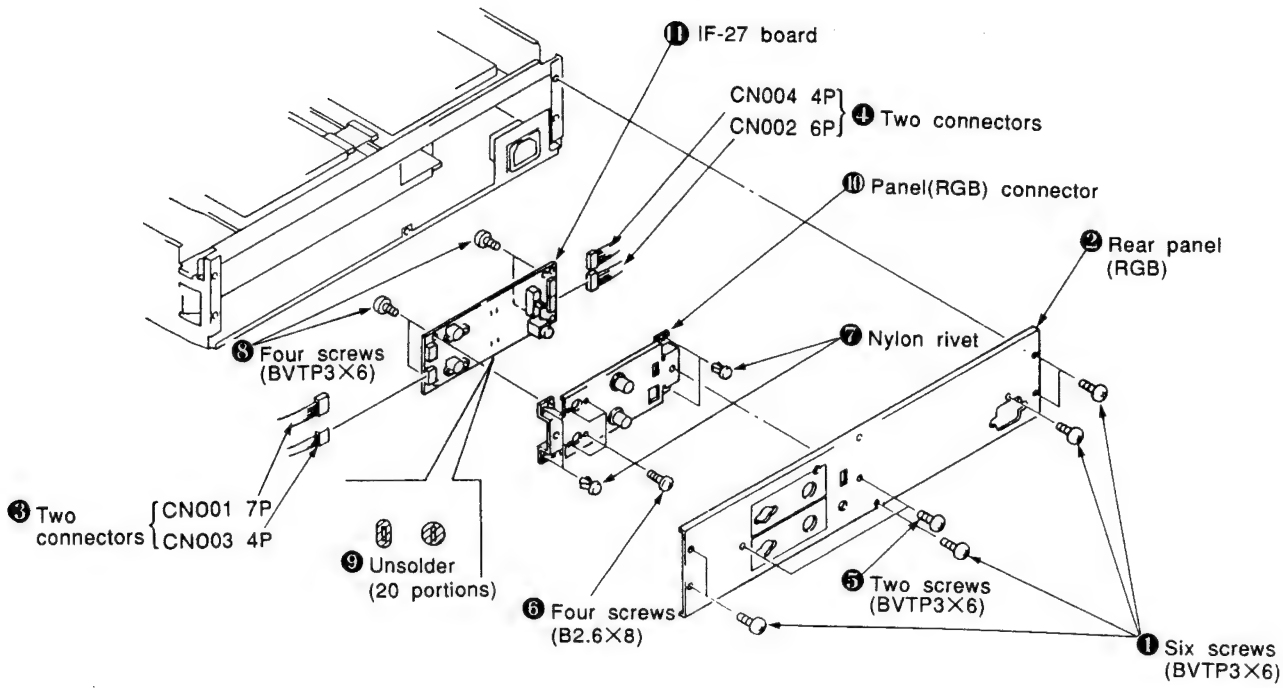
2-1. REMOVAL OF CABINET ASSEMBLY



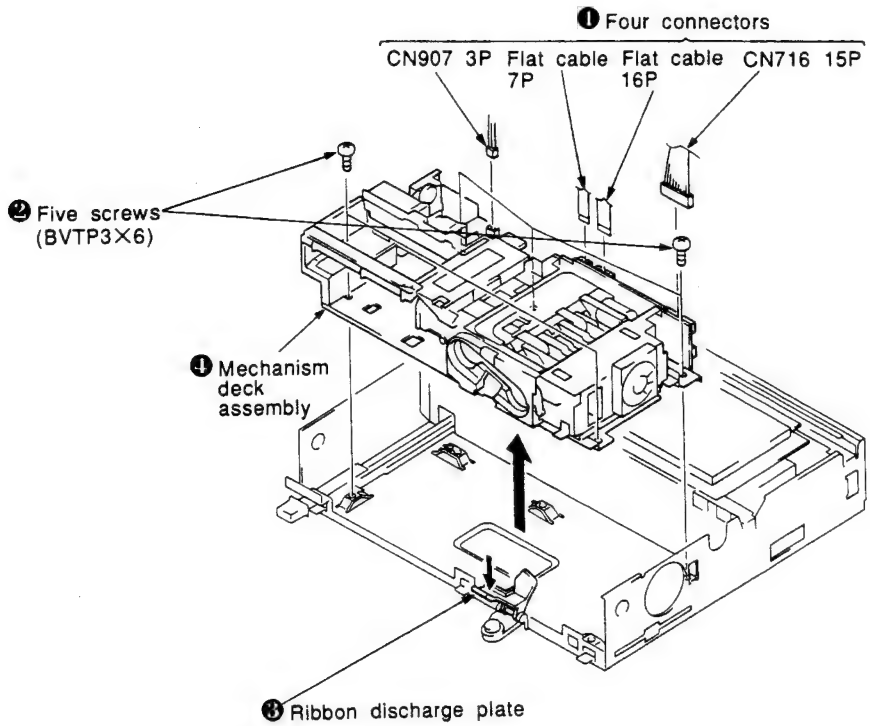
2-2. REMOVAL OF DOOR PANEL SUB ASSEMBLY



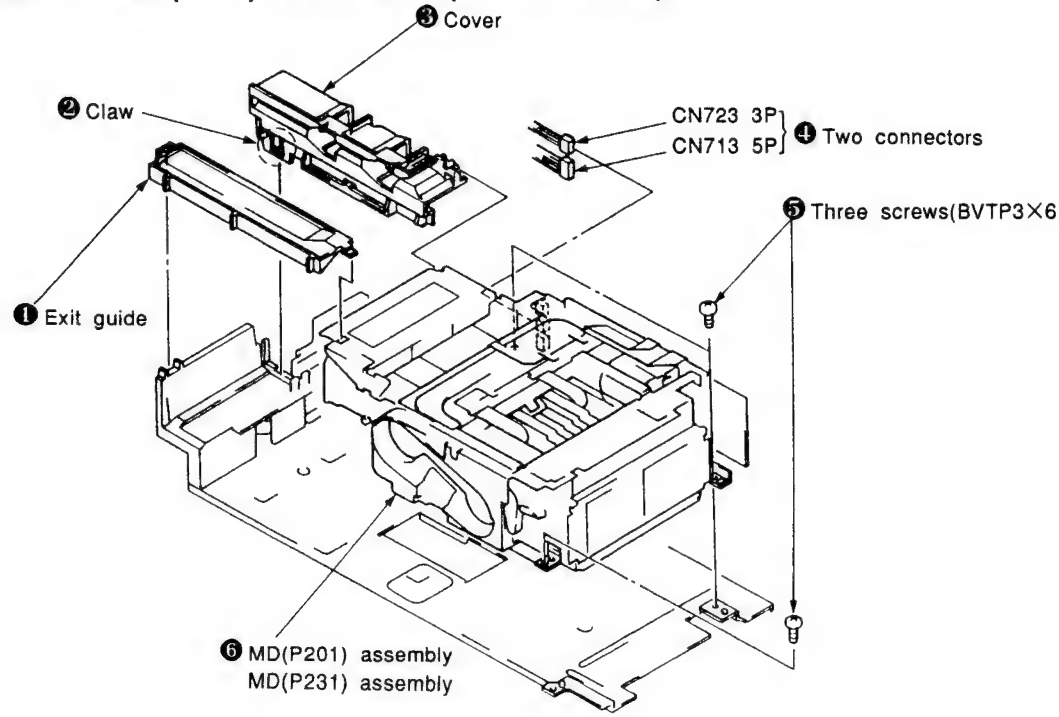
2-3. REMOVAL OF IF-27 BOARD



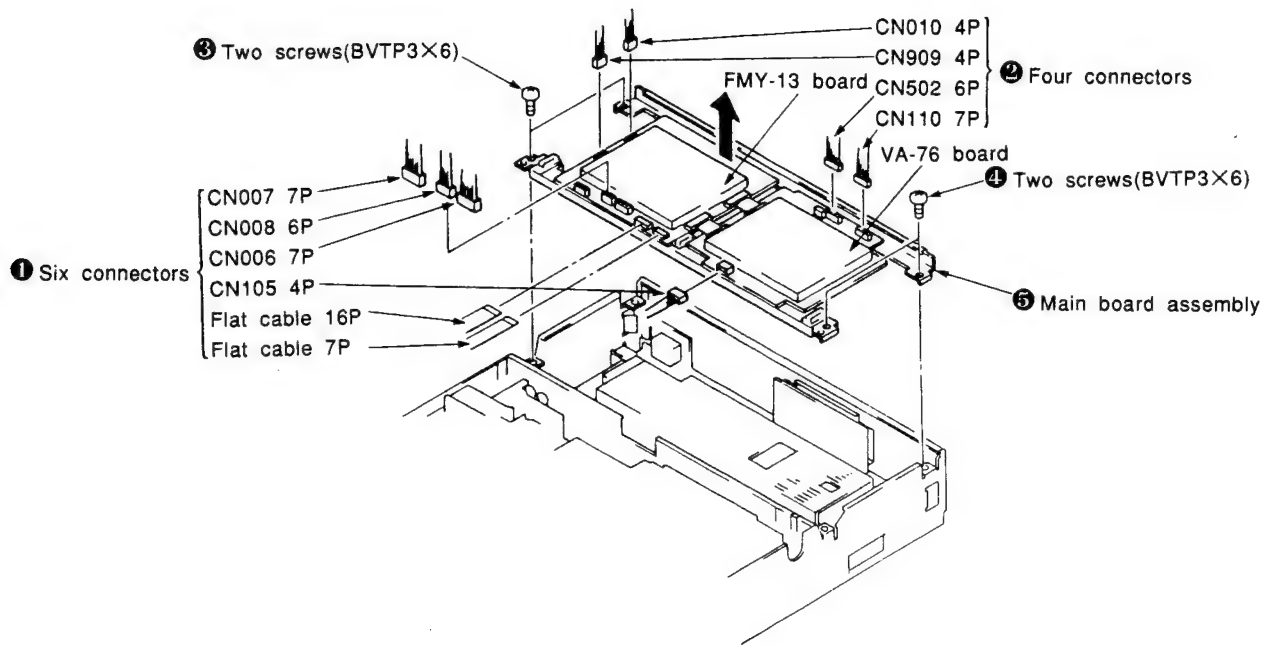
2-4. REMOVAL OF MECHANISM DECK ASSEMBLY



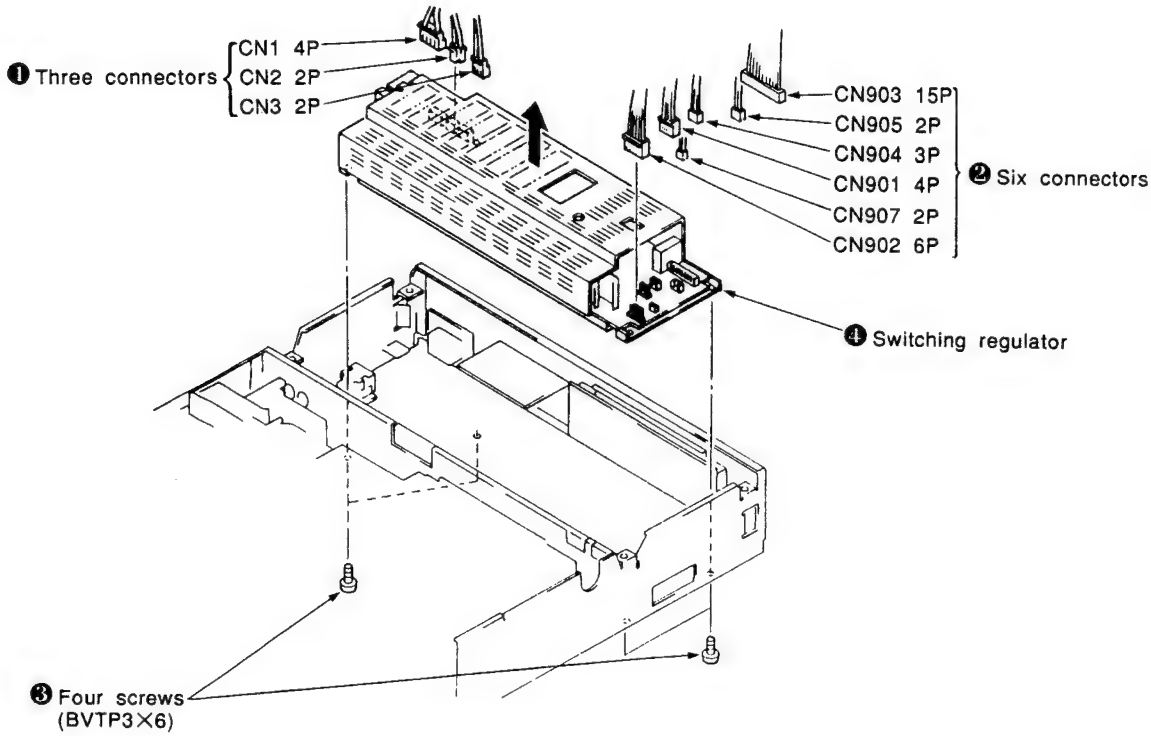
2-5. REMOVAL OF MD (P201) ASSEMBLY (UP-1200A)
REMOVAL OF MD (P231) ASSEMBLY (UP-1200AEPM)



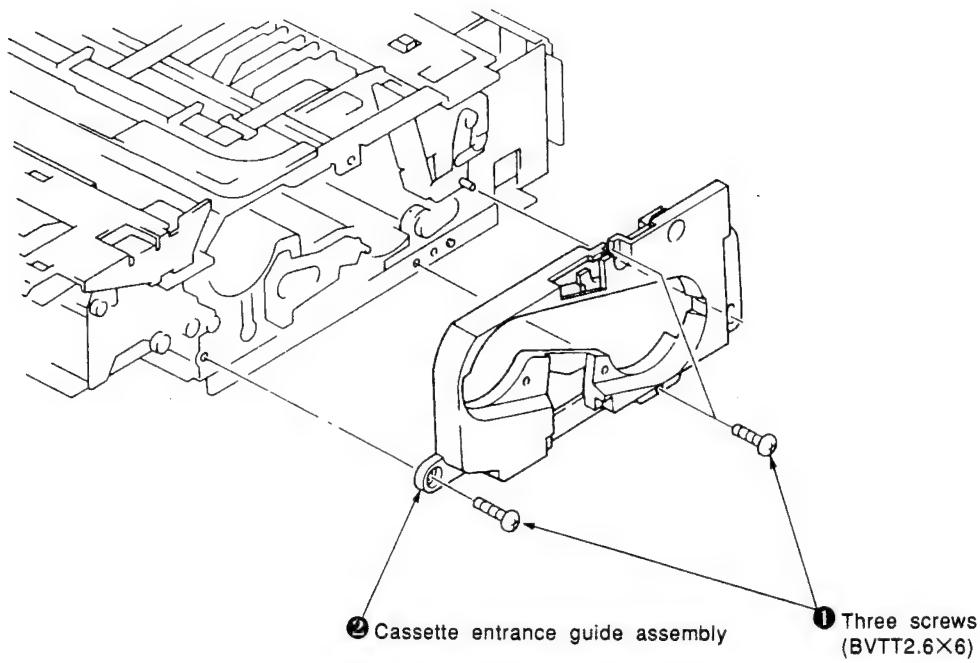
2-6. REMOVAL OF MAIN BOARD (FMY-13 BOARD, VA-76 BOARD) ASSEMBLY



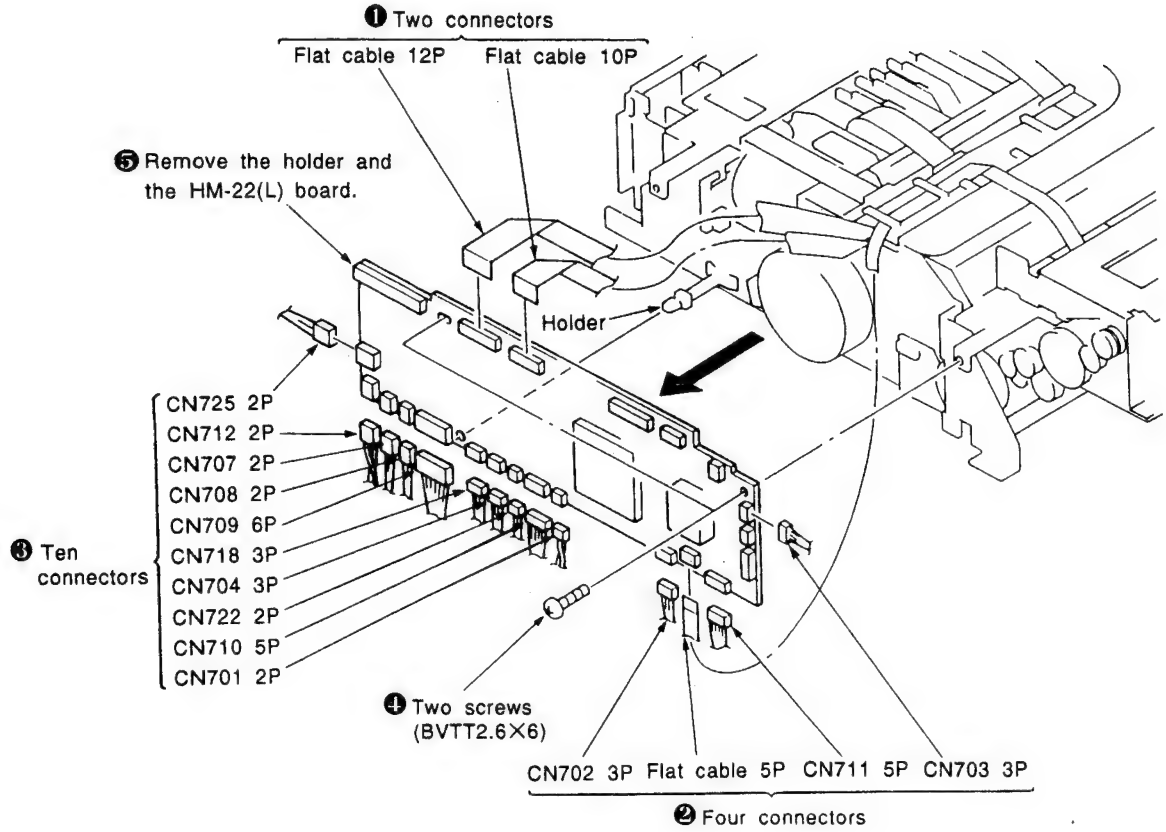
2-7. REMOVAL OF SWITCHING REGULATOR



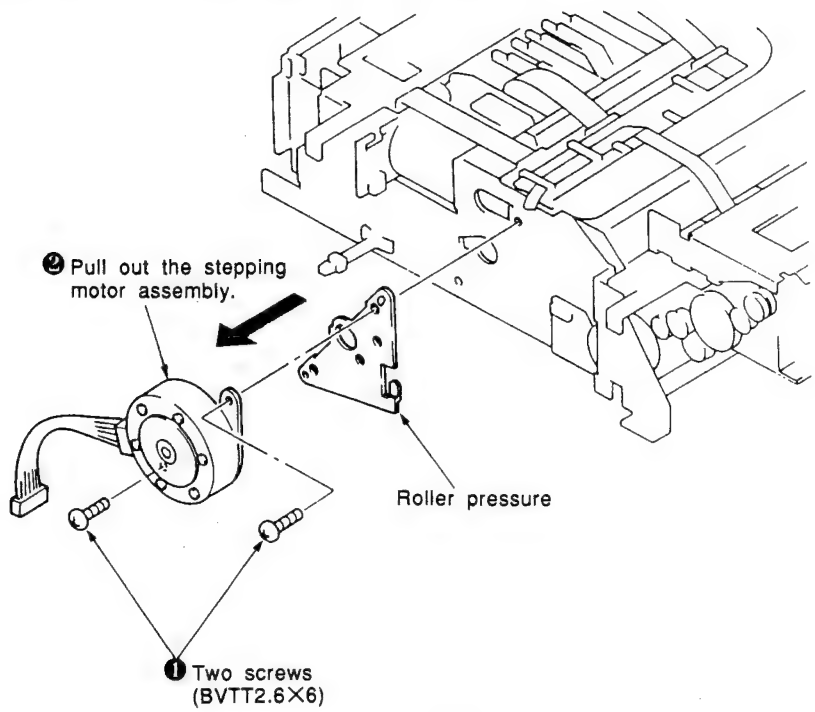
2-8. REMOVAL OF CASSETTE ENTRANCE GUIDE ASSEMBLY



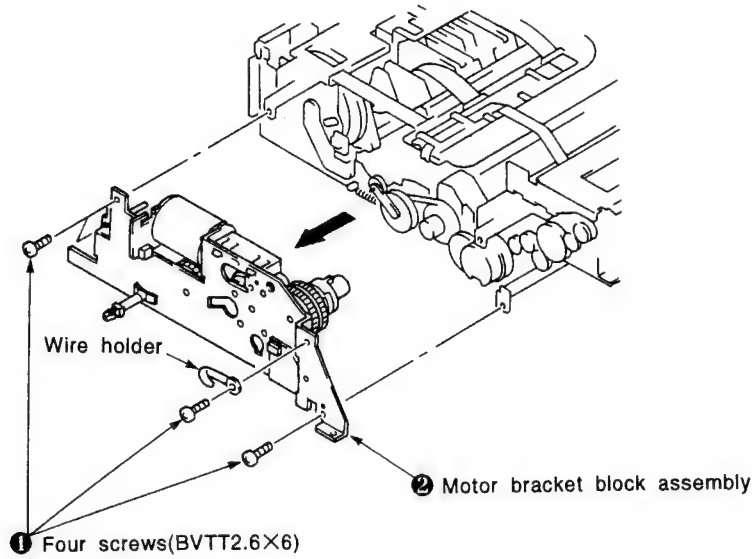
2-9. REMOVAL OF HM-22(L) BOARD



2-10. REMOVAL OF STEPPING MOTOR ASSEMBLY

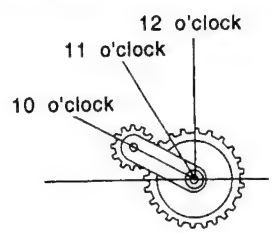


2-11. REMOVAL OF MOTOR BRACKET BLOCK ASSEMBLY

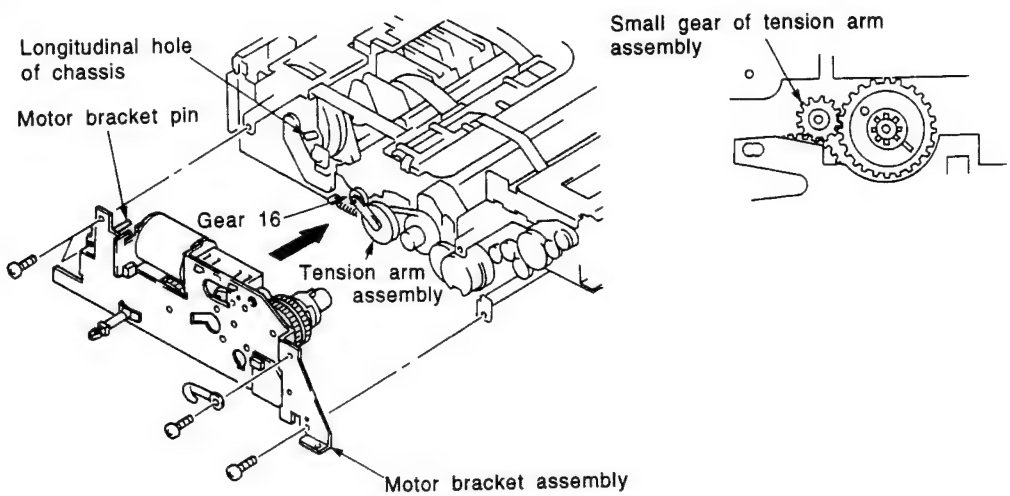


***Cautions during MD Assembling**

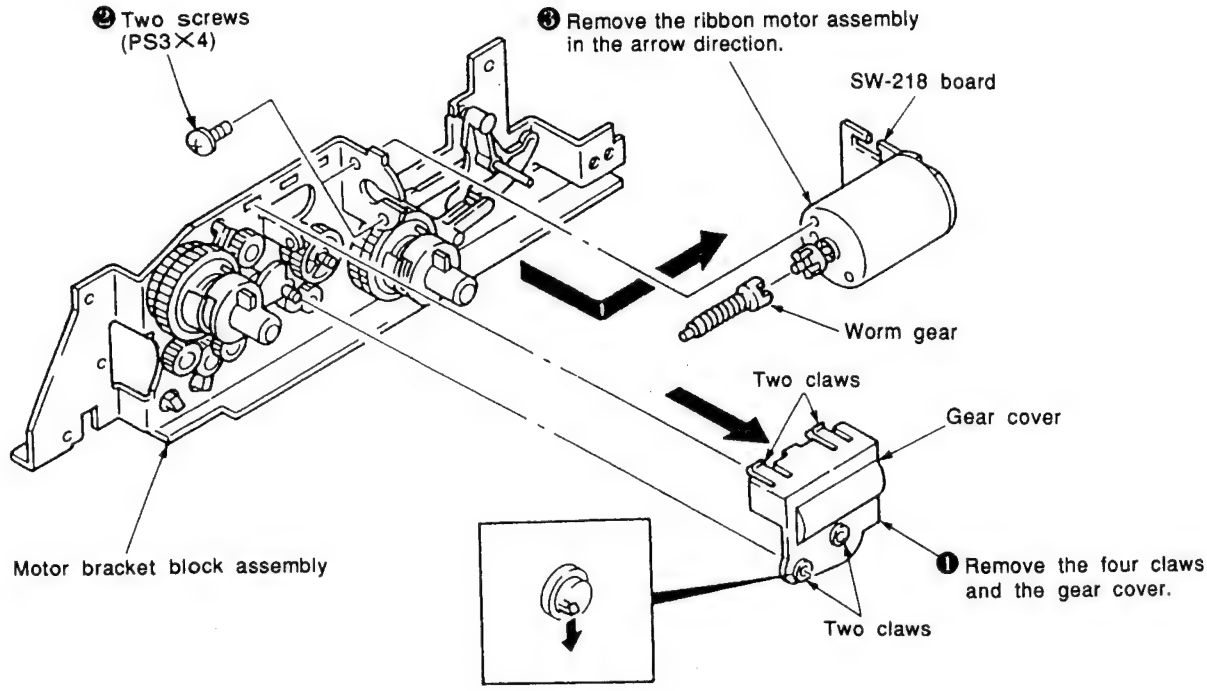
- Assembling of motor bracket assembly
- Confirm that the head is set to the H0 position. (Refer to Fig. 1 in section 2-17.)
- Move the gear 16 arm of the tension arm assembly in the direction of 10 to 11 o'clock.



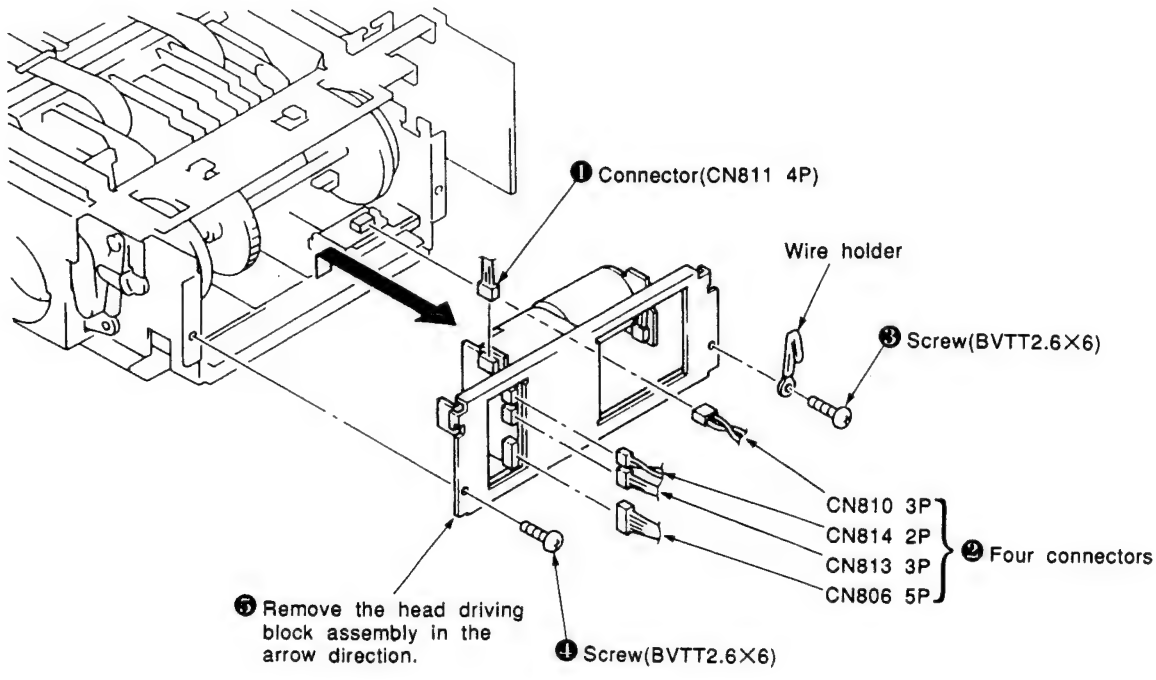
- Install the motor bracket assembly in the chassis.
- Confirm that the pin of the motor bracket is put on the left side of the chassis's longitudinal hole. (Refer to Fig. 3 in section 2-17.)
- View the inside of the chassis from the direction of the ribbon entrance and confirm that gear 16 is properly positioned beside the supply reel assembly. (Take care that the reel wire of the microswitch on the SW-214 board is not caught.)



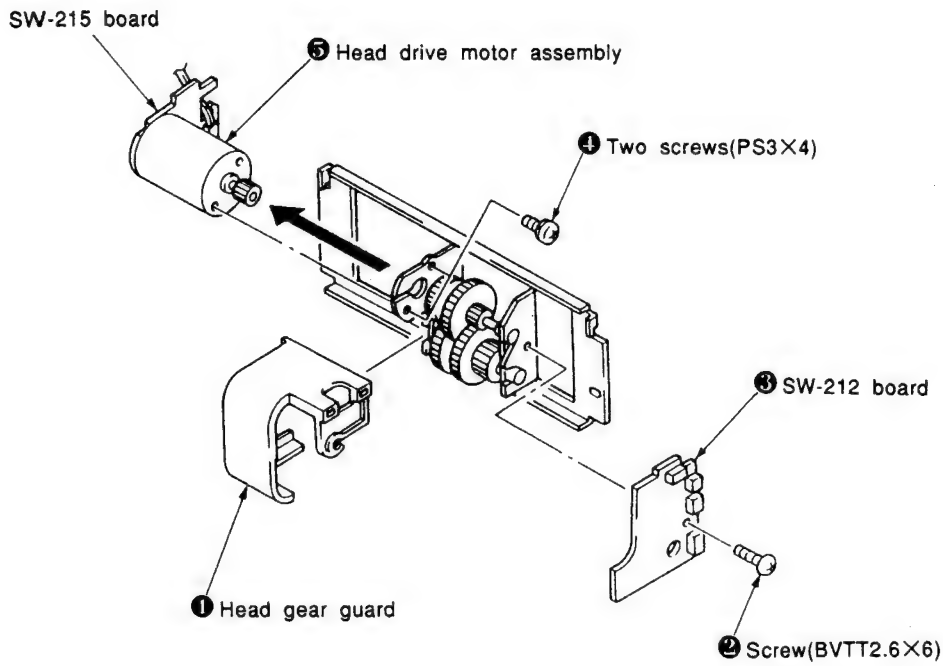
2-12. REMOVAL OF RIBBON MOTOR ASSEMBLY



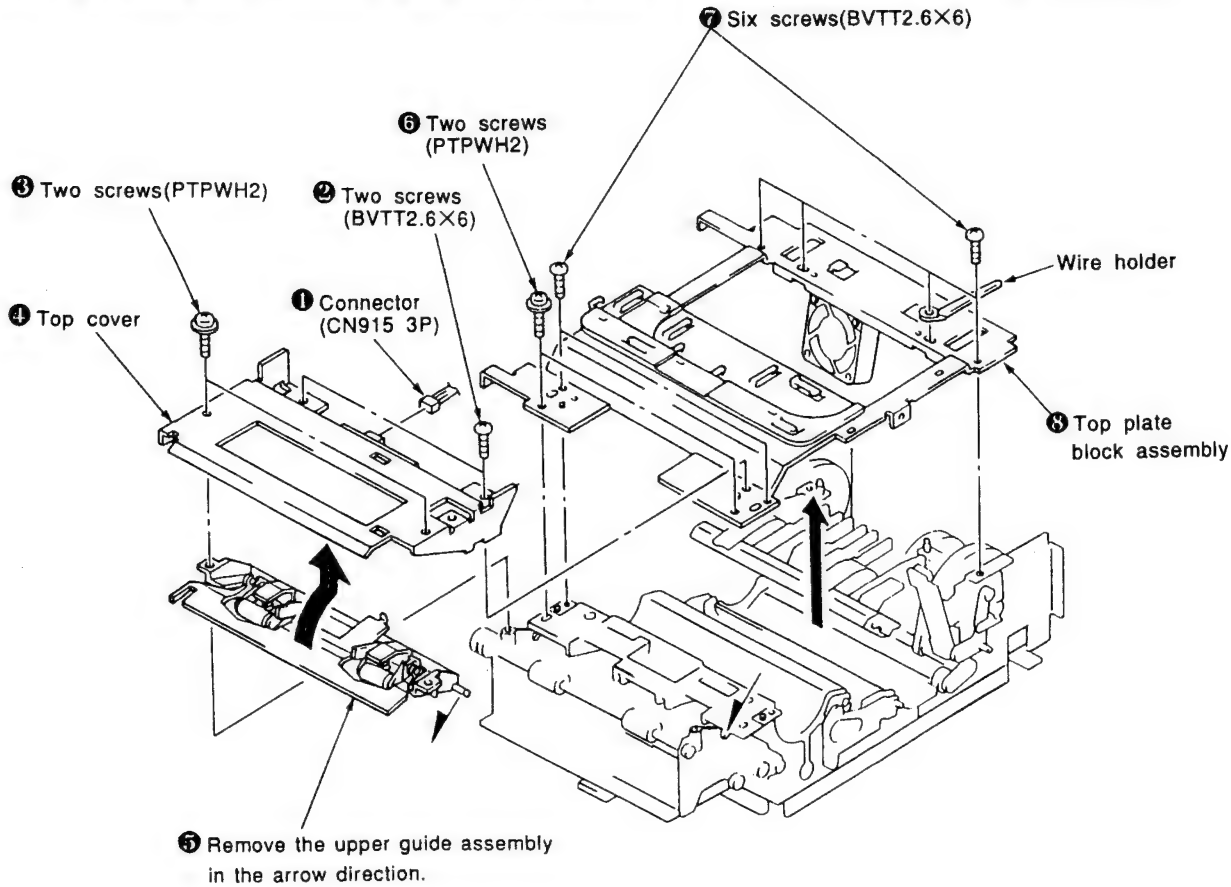
2-13. REMOVAL OF HEAD DRIVING BLOCK ASSEMBLY



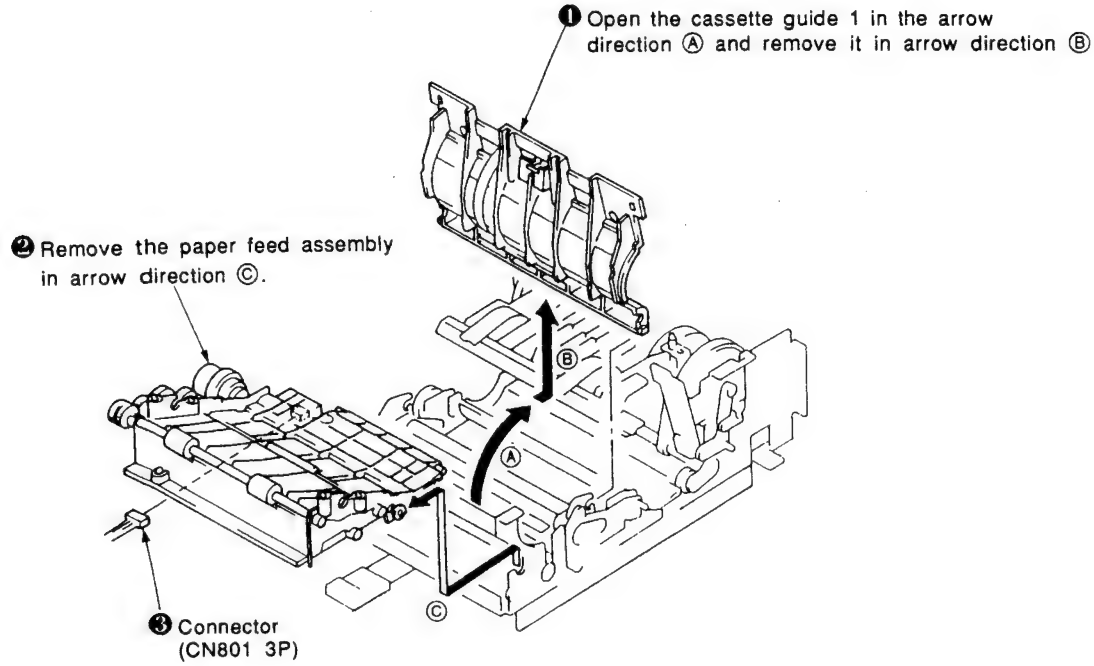
2-14. REMOVAL OF HEAD DRIVE MOTOR ASSEMBLY



2-15. REMOVAL OF UPPER GUIDE ASSEMBLY AND TOP PLATE BLOCK ASSEMBLY



2-16. REMOVAL OF CASSETTE GUIDE 1 AND PAPER FEED ASSEMBLY

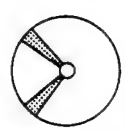


***Cautions during MD Assembling**

- Move the roller to the P2 position. (Refer to the illustrated gear.)
  Rotate the reflection plate of the gear manually so that it is put in the position shown below.

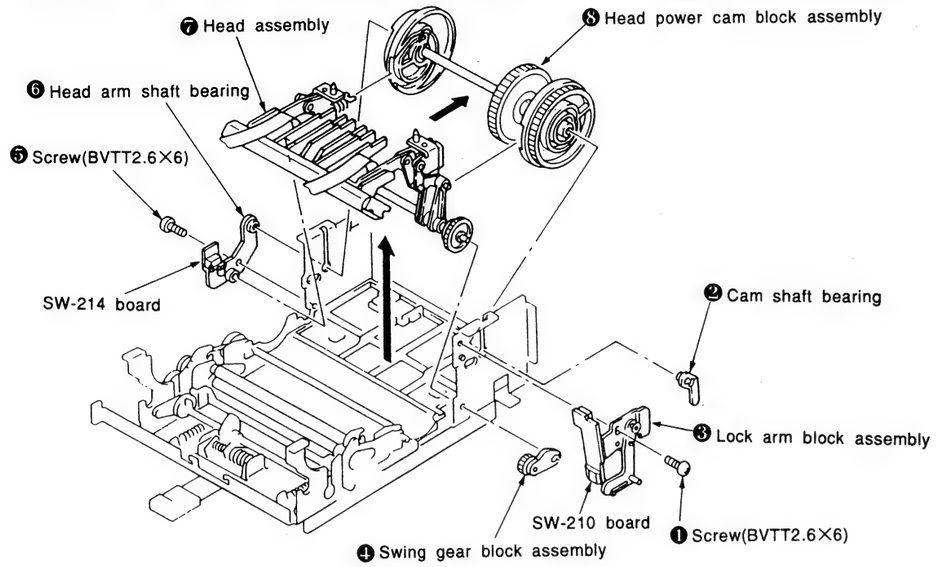
(Set the gear position to P2.)

- Install the paper feed assembly in the chassis. (Refer to section 2-16.)
- Handle the lead wire of the sensor with care and fix it to the hook of the paper feed tray guide.
- Move the roller to the P0 position. (Refer to the illustrated gear.)
  Rotate the reflection plate of the gear manually so that it is put in the position shown below.



(Set the gear position to P0.)

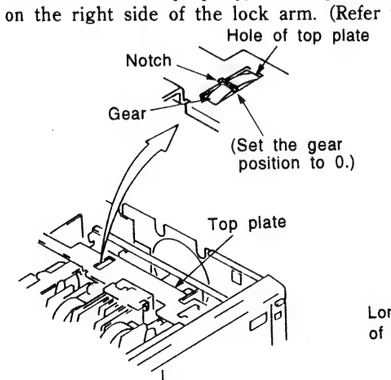
2-17. REMOVAL OF HEAD ASSEMBLY AND HEAD POWER CAM BLOCK ASSEMBLY



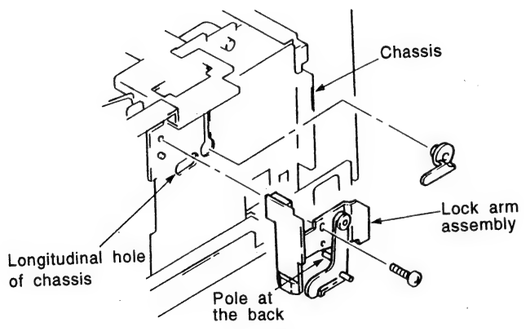
***Cautions during MD Assembling**

- Confirm that the head is set to the H0 position. (Refer to Fig. 1.)
- If the head is not in the H0 position, remove the head drive assembly once, rotate the gear in the direction of the H0 position, and install the head drive assembly again.
- Insert the pole at the back of the lock arm into the groove of the head cam, then install.

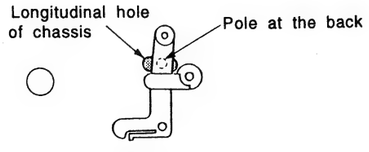
If the lock arm is installed properly, the longitudinal hole of the chassis is viewed on the left side of the lock arm. (Refer to Fig. 3.)
If it is installed improperly, the longitudinal hole of the chassis is viewed on the right side of the lock arm. (Refer to Fig. 4.)



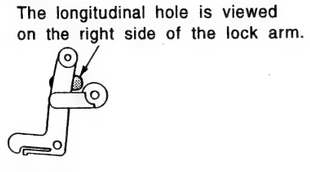
(Fig. 1)



(Fig. 2)

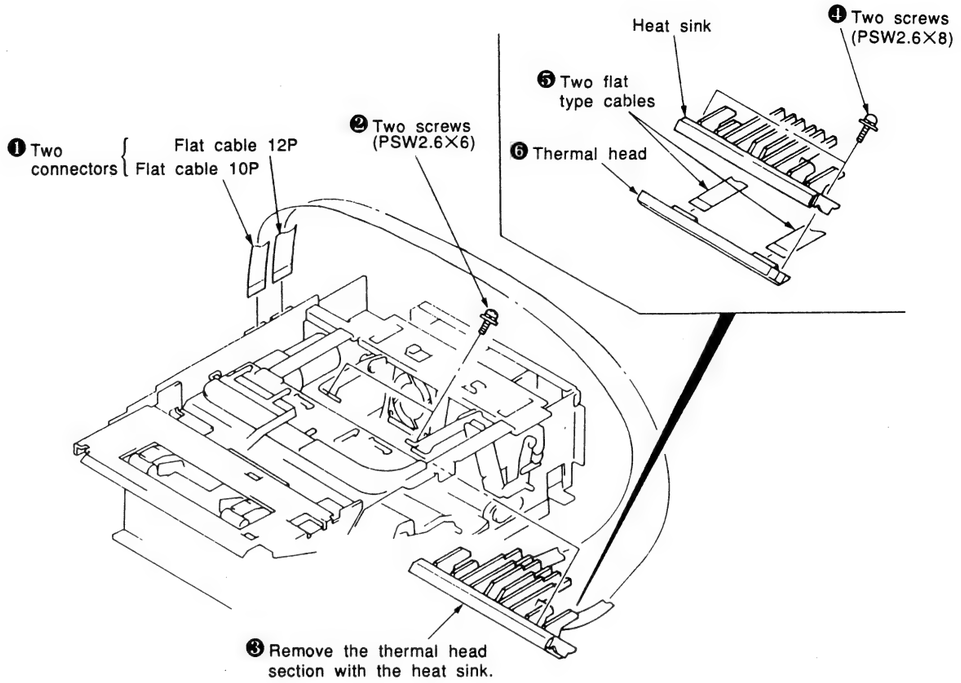


(Fig. 3)



(Fig. 4)

2-18. REMOVAL OF THERMAL HEAD



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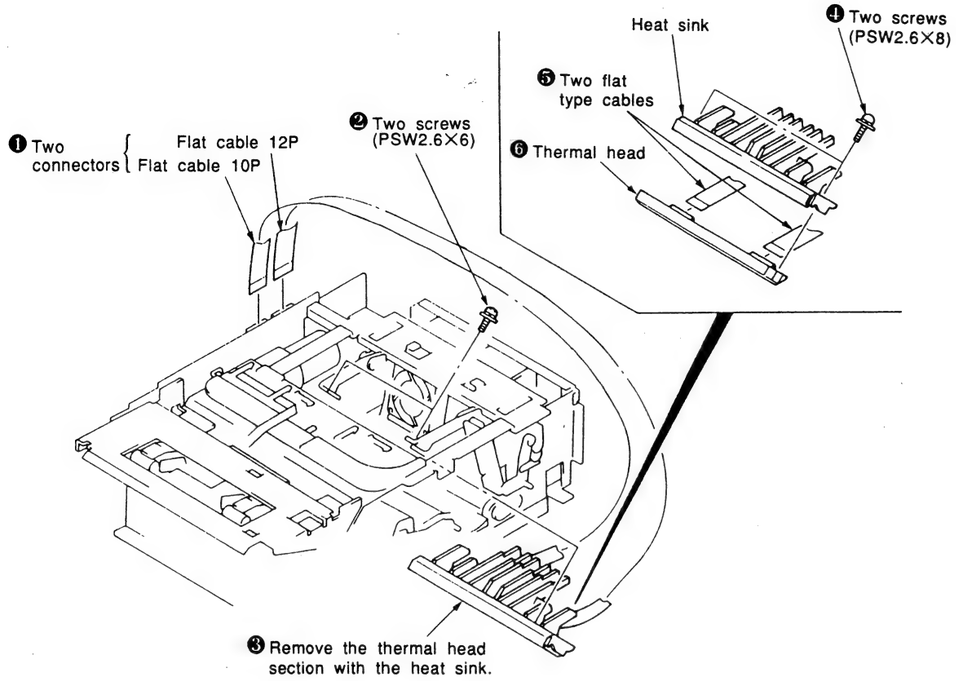
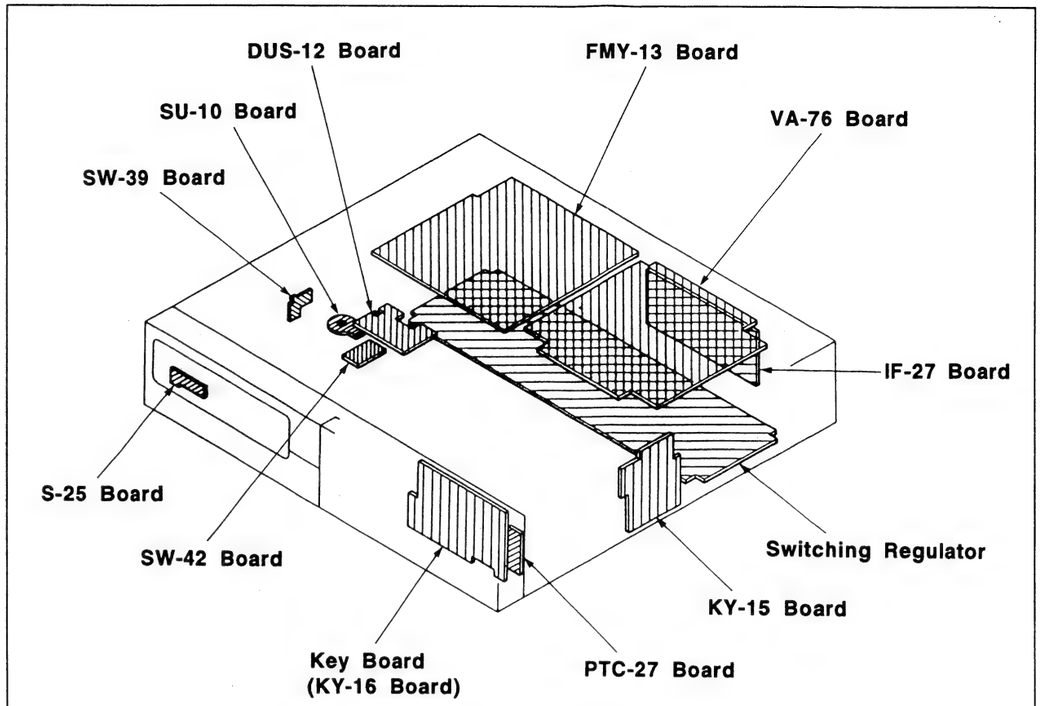
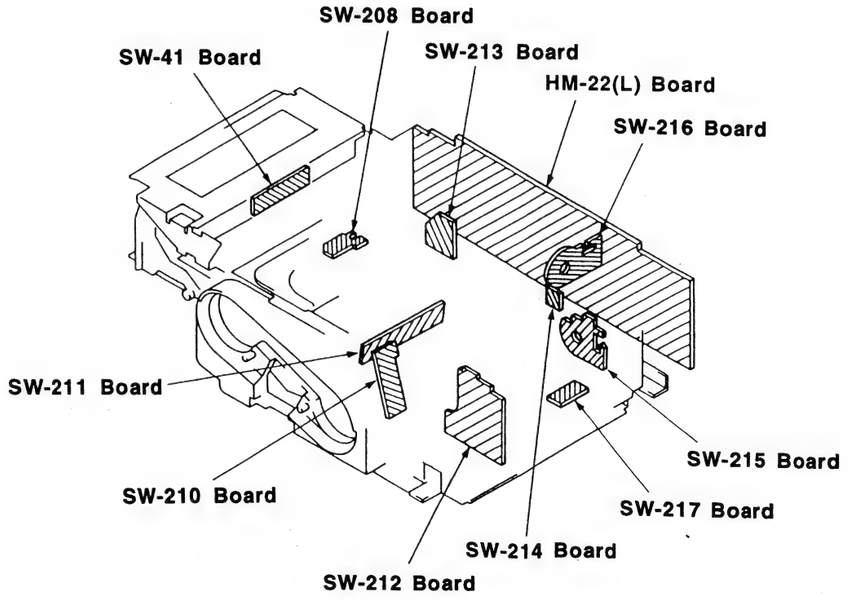
2-18. REMOVAL OF THERMAL HEAD



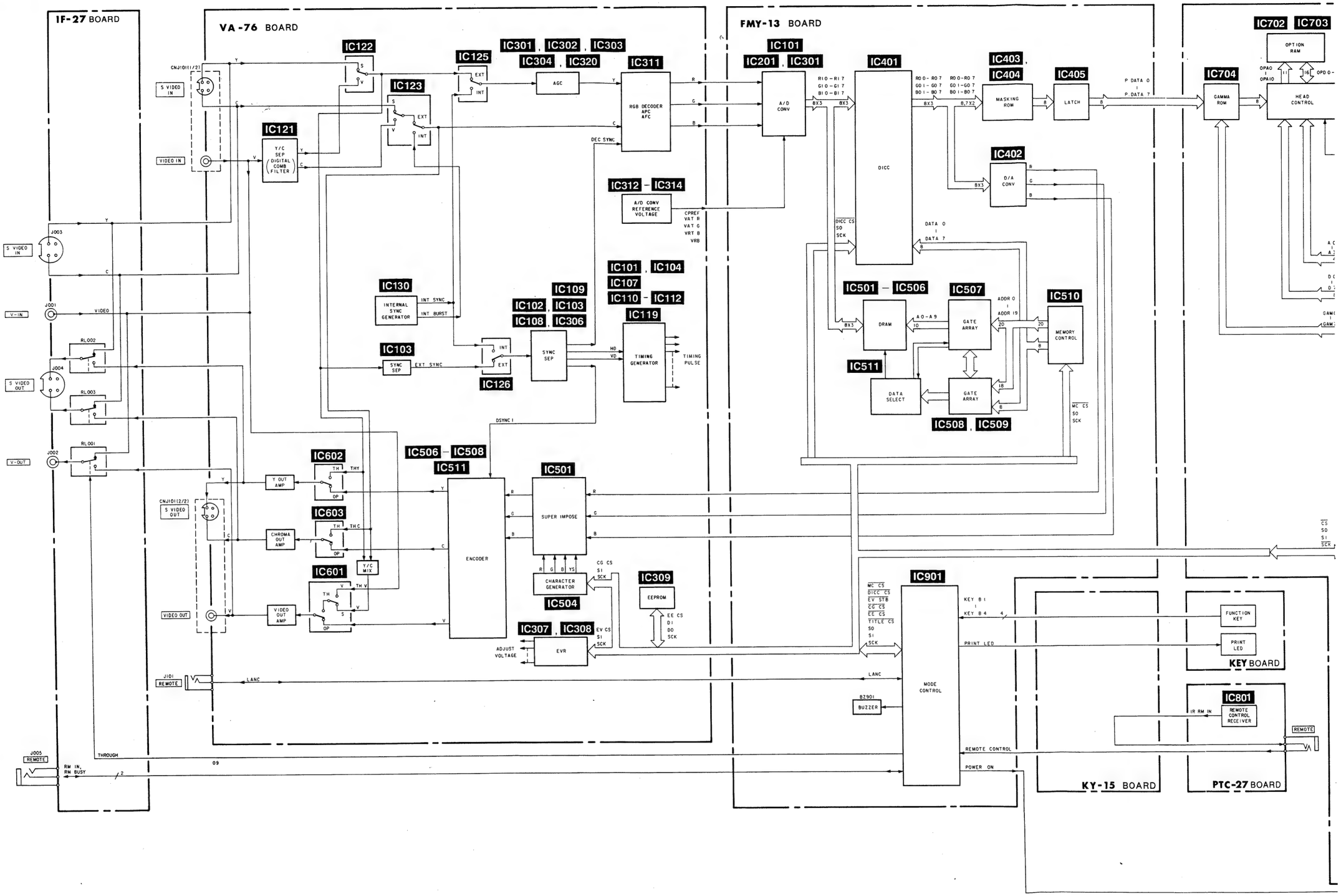
SECTION 3
DIAGRAMS

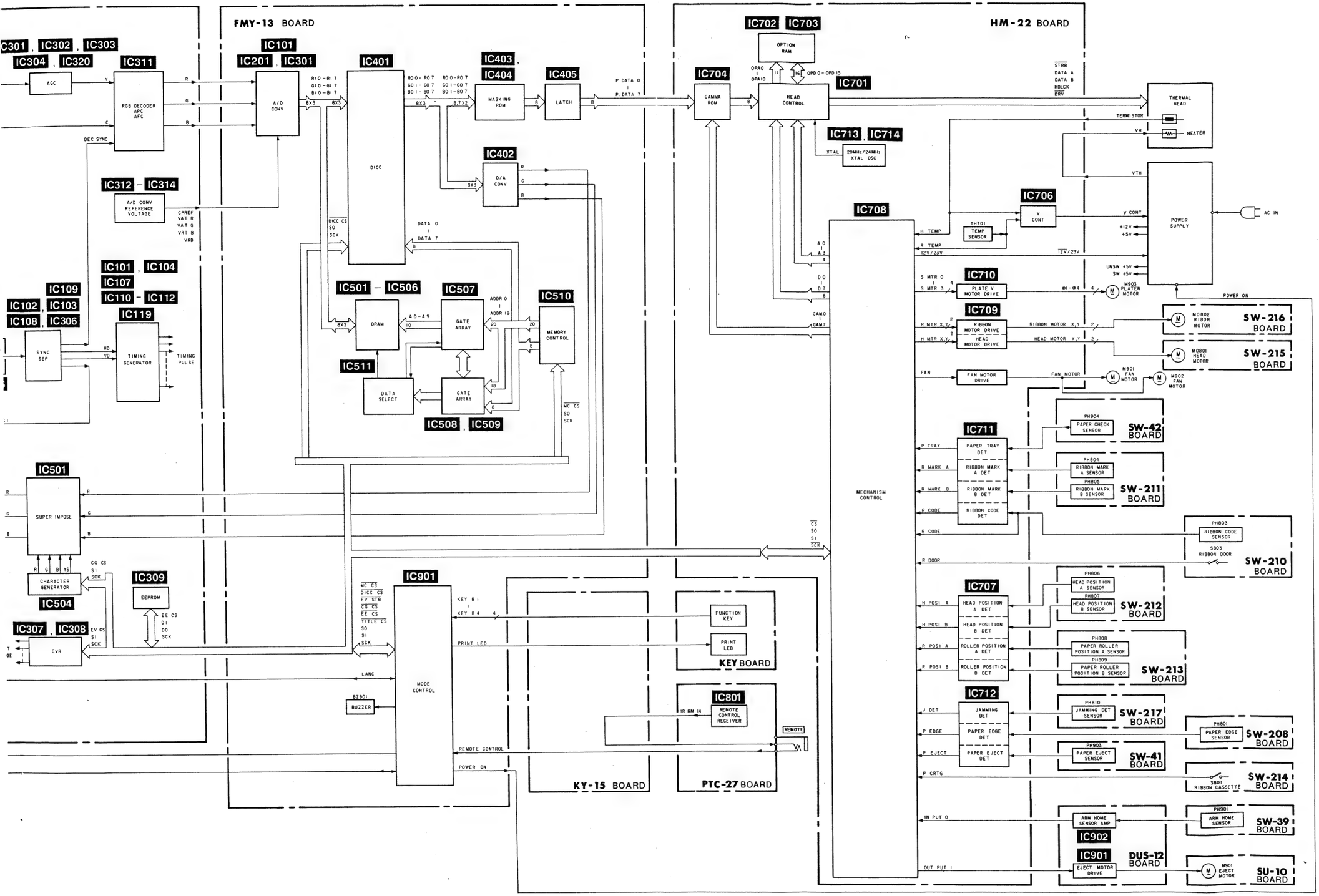
3-1. CIRCUIT BOARDS LOCATION



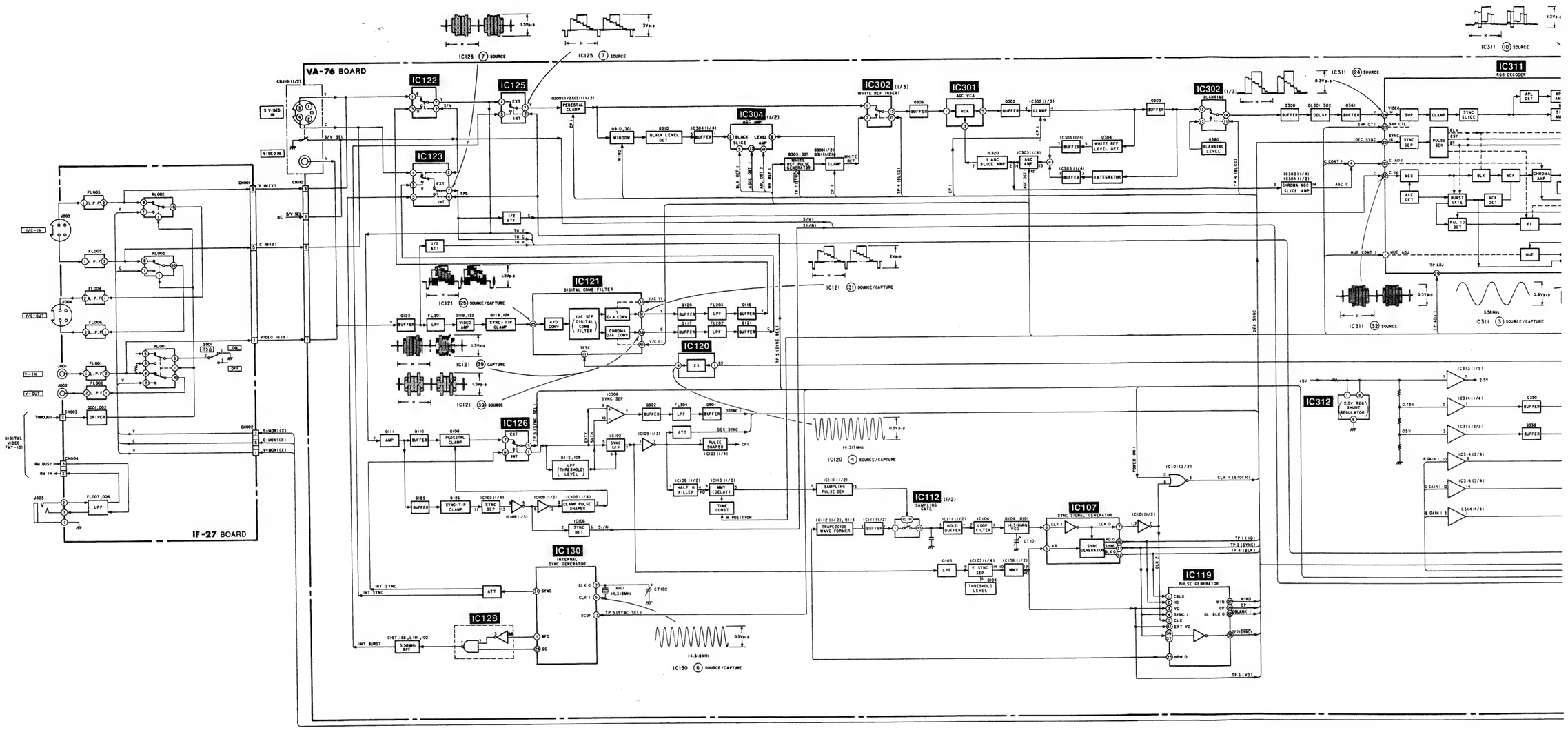


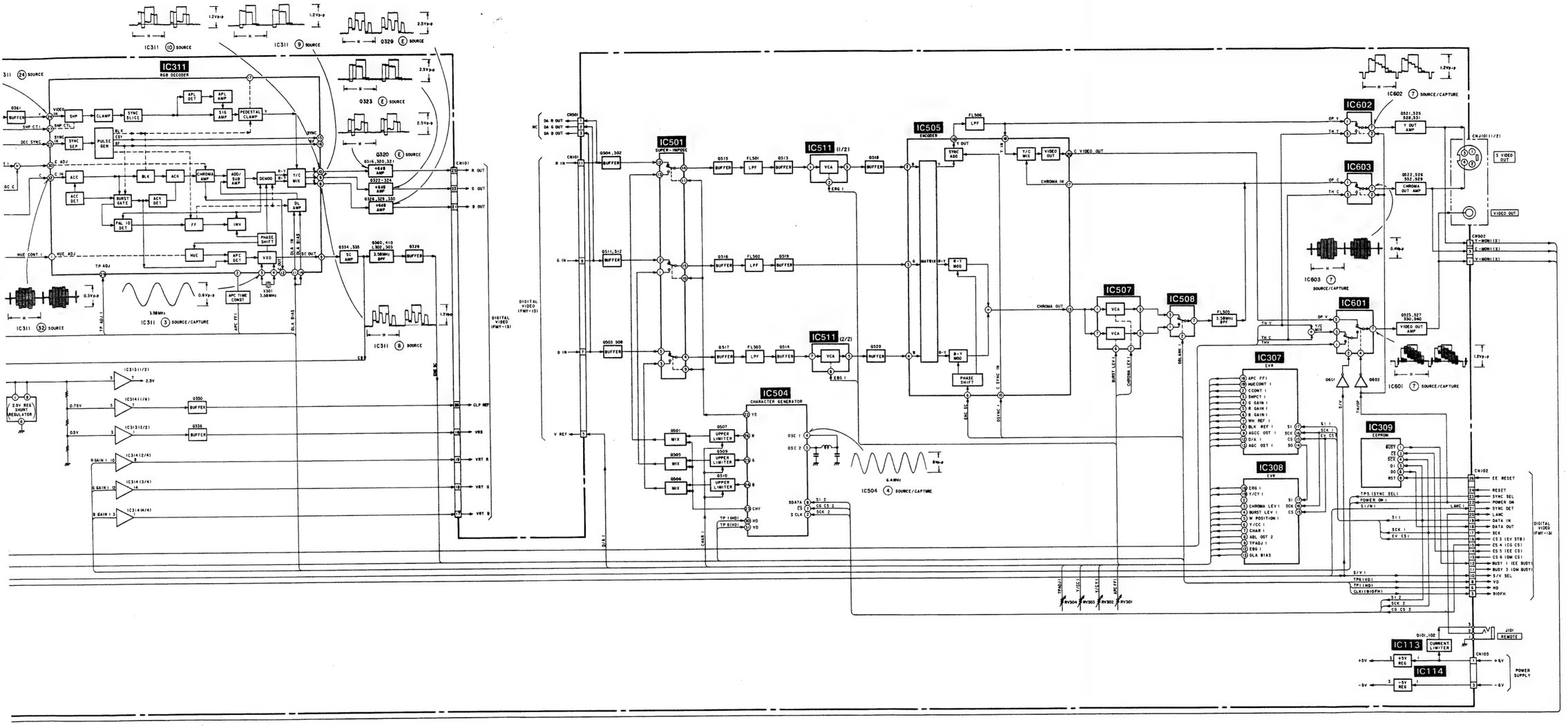
3-2. OVERALL BLOCK DIAGRAM



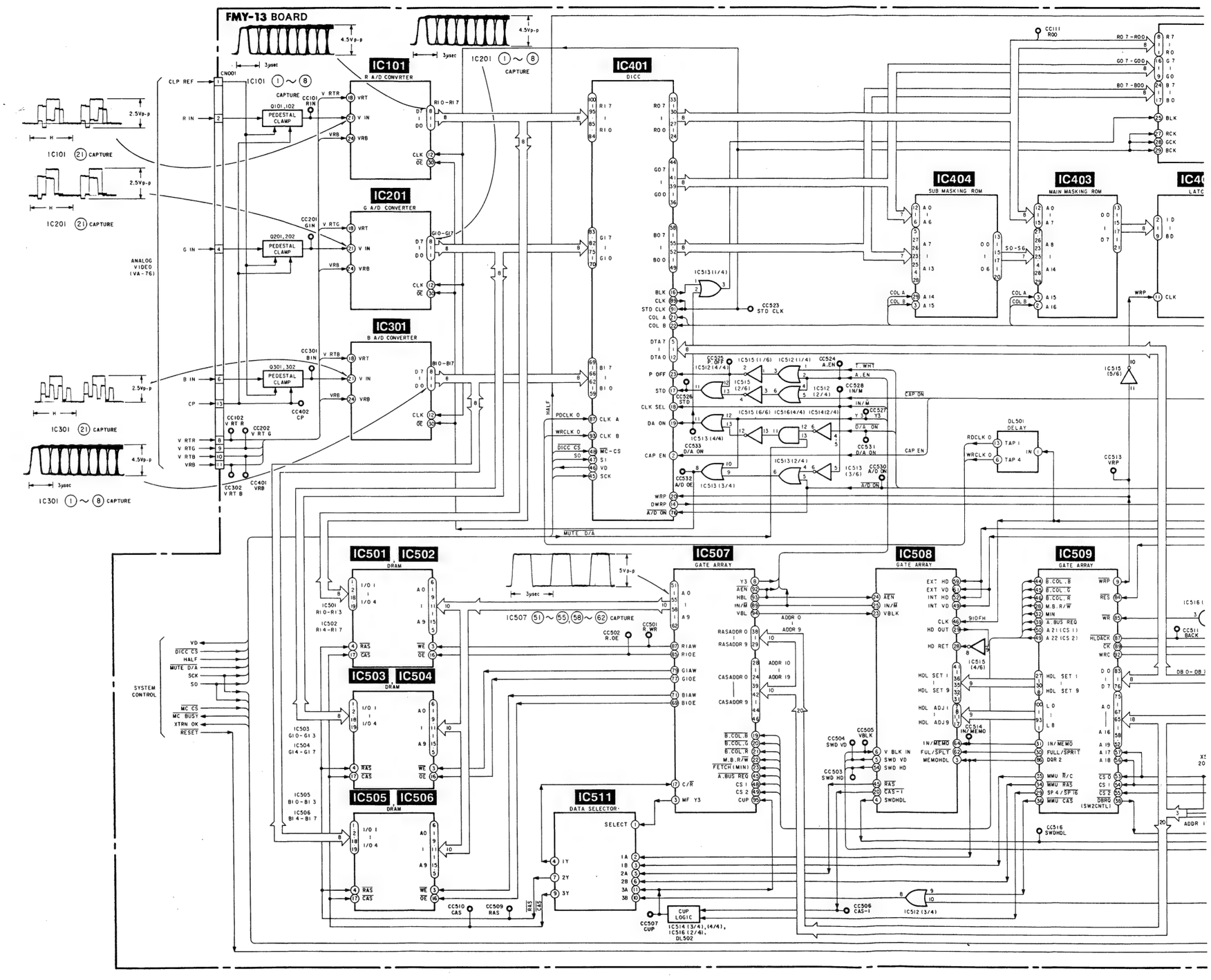

FMY-13 BOARD
HM-22 BOARD
IC301 , IC302 , IC303
IC304 , IC320
IC311
AGC
RGB DECODER APC AFC
DEC SYNC
IC101
IC201 , IC301
A/D CONV
IC401
DICC
IC403 ,
IC404
MASKING ROM
IC405
LATCH
IC402
D/A CONV
IC312 – IC314
A/D CONV REFERENCE VOLTAGE
IC101 , IC104
IC107
IC110 – IC112
IC119
IC109
IC102 , IC103
IC108 , IC306
SYNC SEP
TIMING GENERATOR
TIMING PULSE
IC501 – IC506
DRAM
IC507
GATE ARRAY
IC510
MEMORY CONTROL
IC511
DATA SELECT
GATE ARRAY
IC508 , IC509
IC501
SUPER IMPOSE
CHARACTER GENERATOR
IC504
IC309
EEPROM
IC307 , IC308
EVR
IC901
MODE CONTROL
BZ901
BUZZER
KEY BOARD
FUNCTION KEY
PRINT LED
KY-15 BOARD
IC801
REMOTE CONTROL RECEIVER
PTC-27 BOARD
IC702 IC703
OPTION RAM
IC704
GAMMA ROM
IC701
HEAD CONTROL
IC713 , IC714
XTAL OSC
20MHz/24MHz
IC708
MECHANISM CONTROL
THERMAL HEAD
TERMISTOR
HEATER
IC706
V CONT
TH701 TEMP SENSOR
POWER SUPPLY
AC IN
IC710
PLATE V MOTOR DRIVE
M903 PLATEN MOTOR
IC709
RIBBON MOTOR DRIVE
HEAD MOTOR DRIVE
M0802 RIBON MOTOR
SW-216 BOARD
M0801 HEAD MOTOR
SW-215 BOARD
FAN MOTOR DRIVE
M901 FAN MOTOR
M902 FAN MOTOR
IC711
PAPER TRAY DET
RIBBON MARK A DET
RIBBON MARK B DET
RIBBON CODE DET
PH904 PAPER CHECK SENSOR
SW-42 BOARD
PH804 RIBBON MARK A SENSOR
PH805 RIBBON MARK B SENSOR
SW-211 BOARD
PH803 RIBBON CODE SENSOR
S803 RIBBON DOOR
SW-210 BOARD
IC707
HEAD POSITION A DET
HEAD POSITION B DET
ROLLER POSITION A DET
ROLLER POSITION B DET
PH806 HEAD POSITION A SENSOR
PH807 HEAD POSITION B SENSOR
SW-212 BOARD
PH808 PAPER ROLLER POSITION A SENSOR
PH809 PAPER ROLLER POSITION B SENSOR
SW-213 BOARD
IC712
JAMMING DET
PAPER EDGE DET
PAPER EJECT DET
PH810 JAMMING DET SENSOR
SW-217 BOARD
PH801 PAPER EDGE SENSOR
SW-208 BOARD
PH903 PAPER EJECT SENSOR
SW-41 BOARD
S801 RIBBON CASSETTE
SW-214 BOARD
PH901 ARM HOME SENSOR
SW-39 BOARD
IC902 ARM HOME SENSOR AMP
IC901 EJECT MOTOR DRIVE
DUS-12 BOARD
M901 EJECT MOTOR
SU-10 BOARD

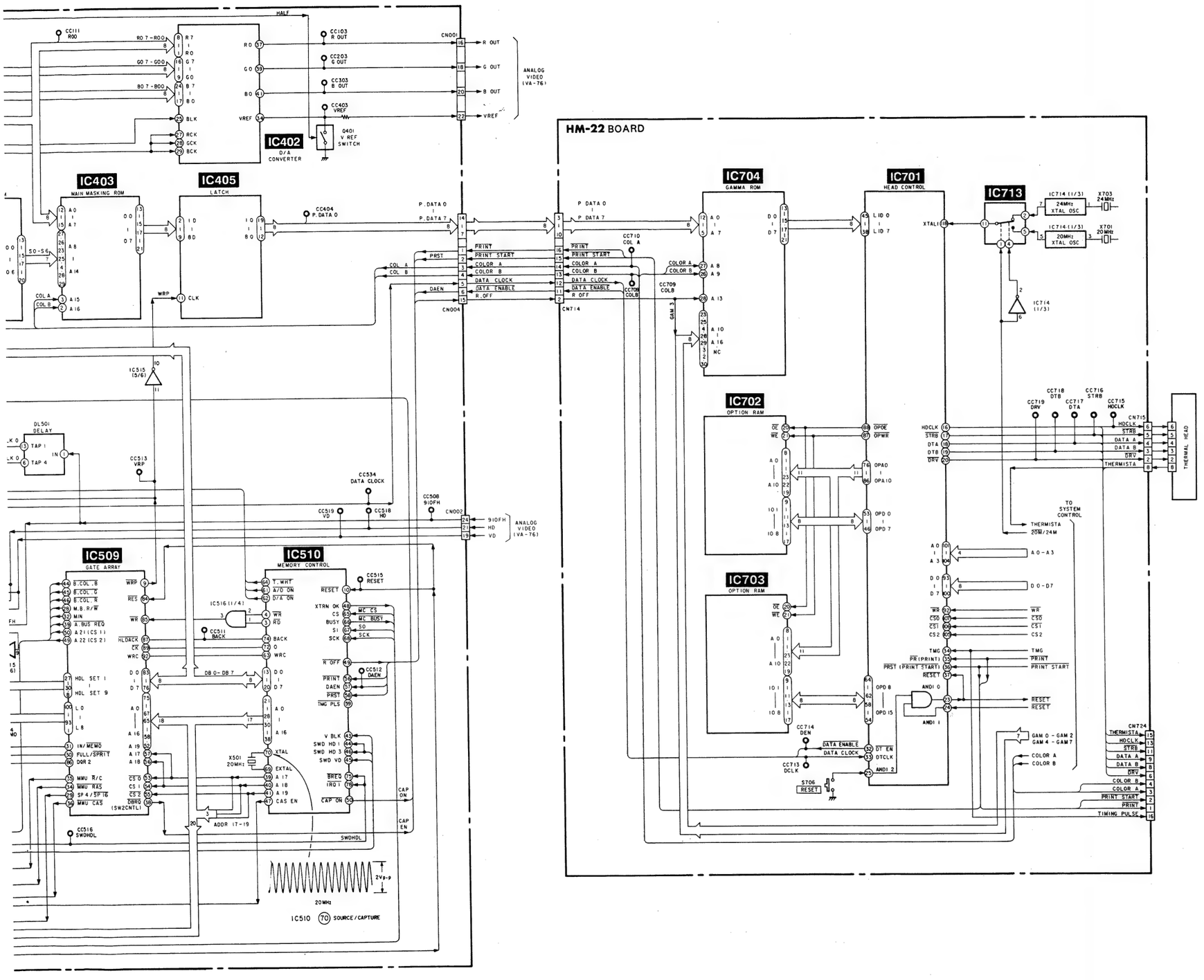
3-3. ANALOG BLOCK DIAGRAM



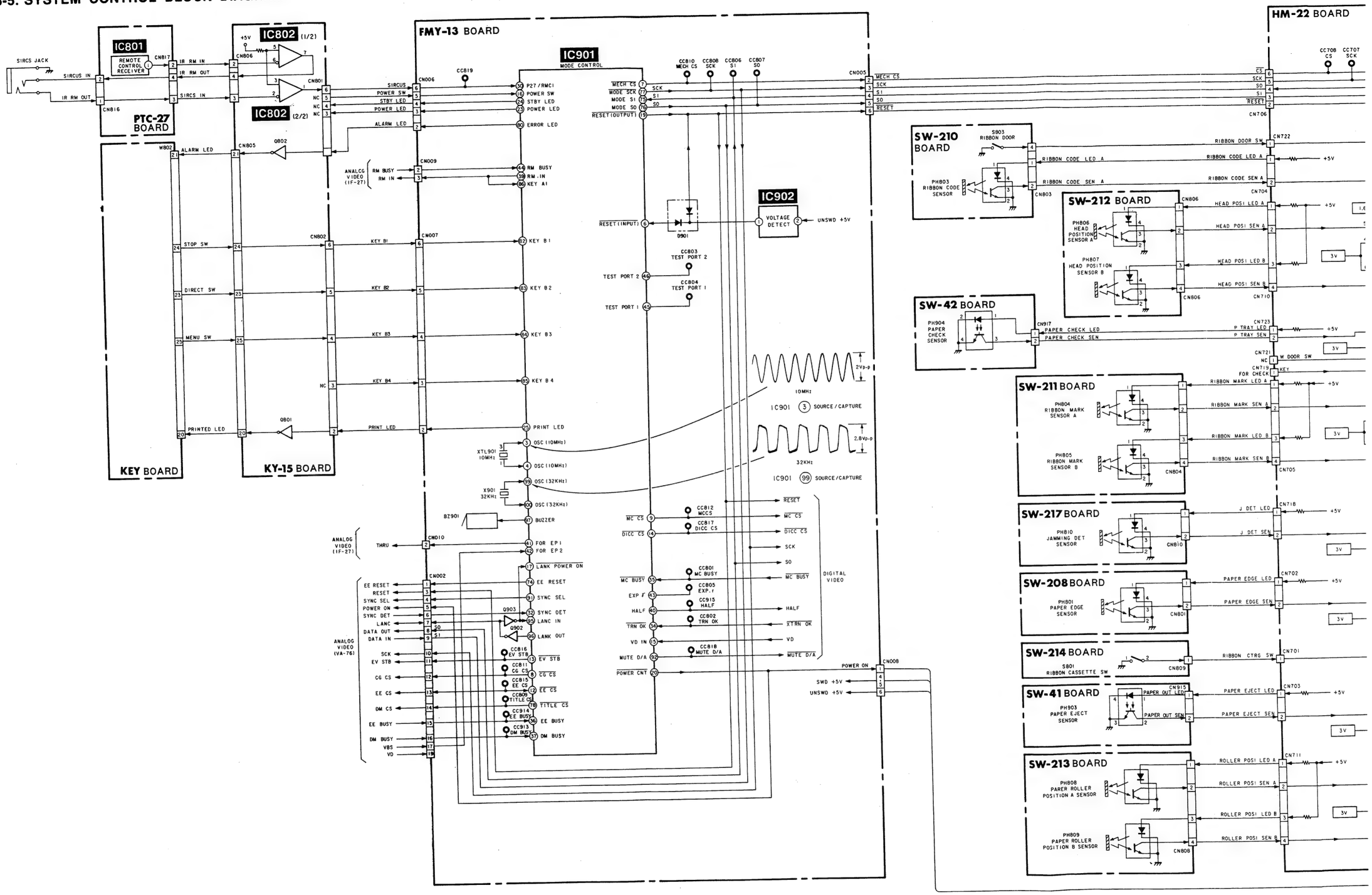

IC311
RGB DECODER
IC501
SUPER-IMPOSE
IC505
ENCODER
IC504
CHARACTER GENERATOR
IC511 (1/2)
IC511 (2/2)
IC507
IC508
IC602
IC603
IC601
IC307
EVR
IC308
EVR
IC309
EEPROM
IC113
CURRENT LIMITER
IC114
+5V REG
-5V REG
DIGITAL VIDEO (FMY-13)
S VIDEO OUT
VIDEO OUT
REMOTE
POWER SUPPLY
IC311 (24) SOURCE
IC311 (10) SOURCE
IC311 (9) SOURCE
IC311 (32) SOURCE
IC311 (3) SOURCE/CAPTURE
IC311 (8) SOURCE
IC504 (4) SOURCE/CAPTURE
IC602 (7) SOURCE/CAPTURE
IC603 (7) SOURCE/CAPTURE
IC601 (7) SOURCE/CAPTURE
0323 (E) SOURCE
0329 (E) SOURCE
0320 (E) SOURCE
R OUT
G OUT
B OUT
CLP REF
VRB
VRT R
VRT G
VRT B
R-Y MOD
B-Y MOD
PHASE SHIFT
UPPER LIMITER
MIX
BUFFER
LPF
VCA
SYNC SEP
PULSE GEN
CLAMP
SHP
ACC
ACK
BLK
CHROMA AMP
ADD/SUB AMP
DEMOD
Y/C MIX
VIDEO OUT
Y OUT AMP
CHROMA OUT AMP
VIDEO OUT AMP
EE RESET
RESET
SYNC SEL
POWER ON
SYNC OUT
LAMC
DATA IN
DATA OUT
SCK
CS 3 (EV STB)
CS 4 (CG CS)
CS 5 (EE CS)
CS 6 (DM CS)
BUSY 1 (EE BUSY)
BUSY 3 (DM BUSY)
S/V SEL
VD
HD
910FH
J101
REMOTE
CN105
+6V
-6V

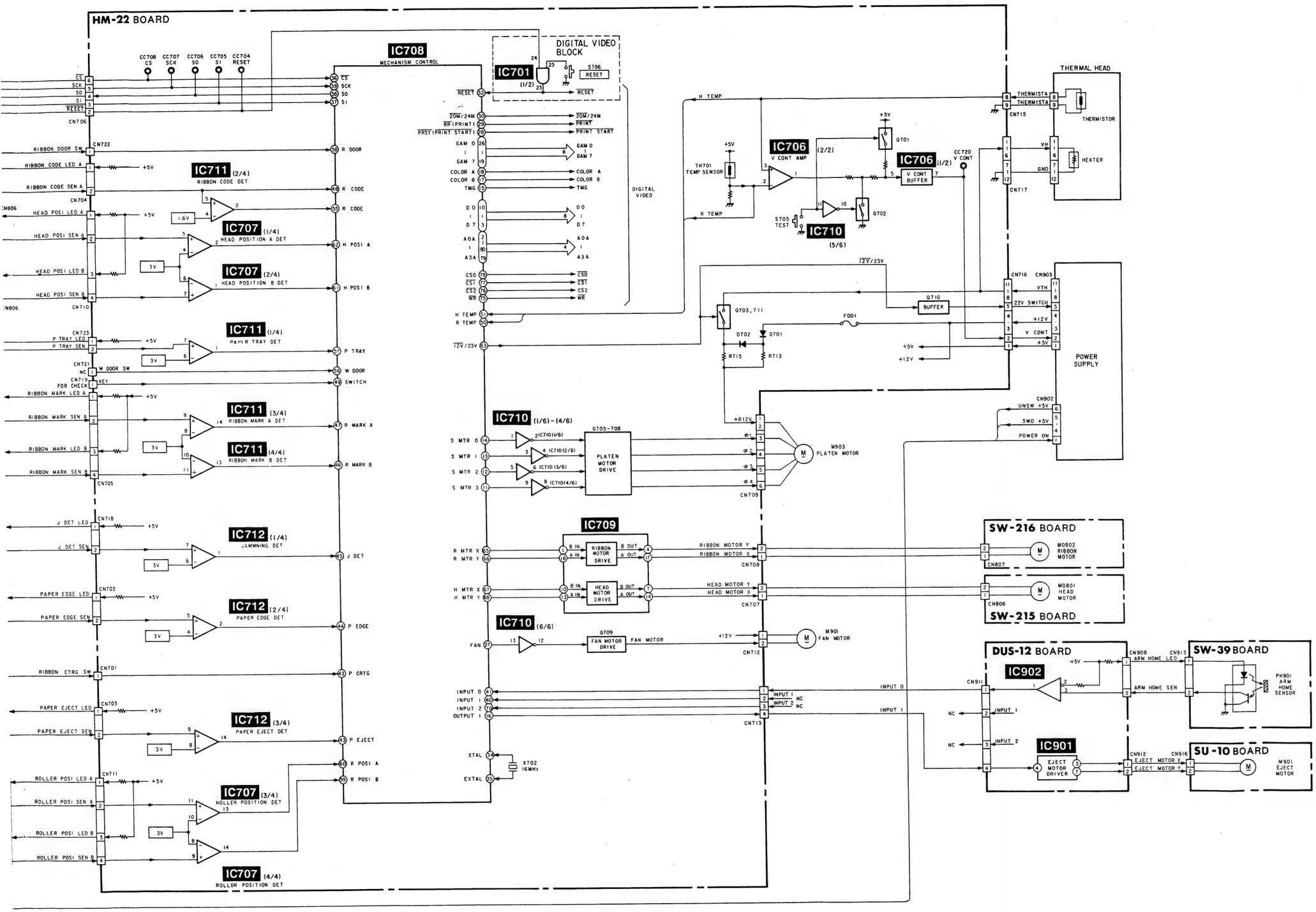
3-4. DIGITAL BLOCK DIAGRAM



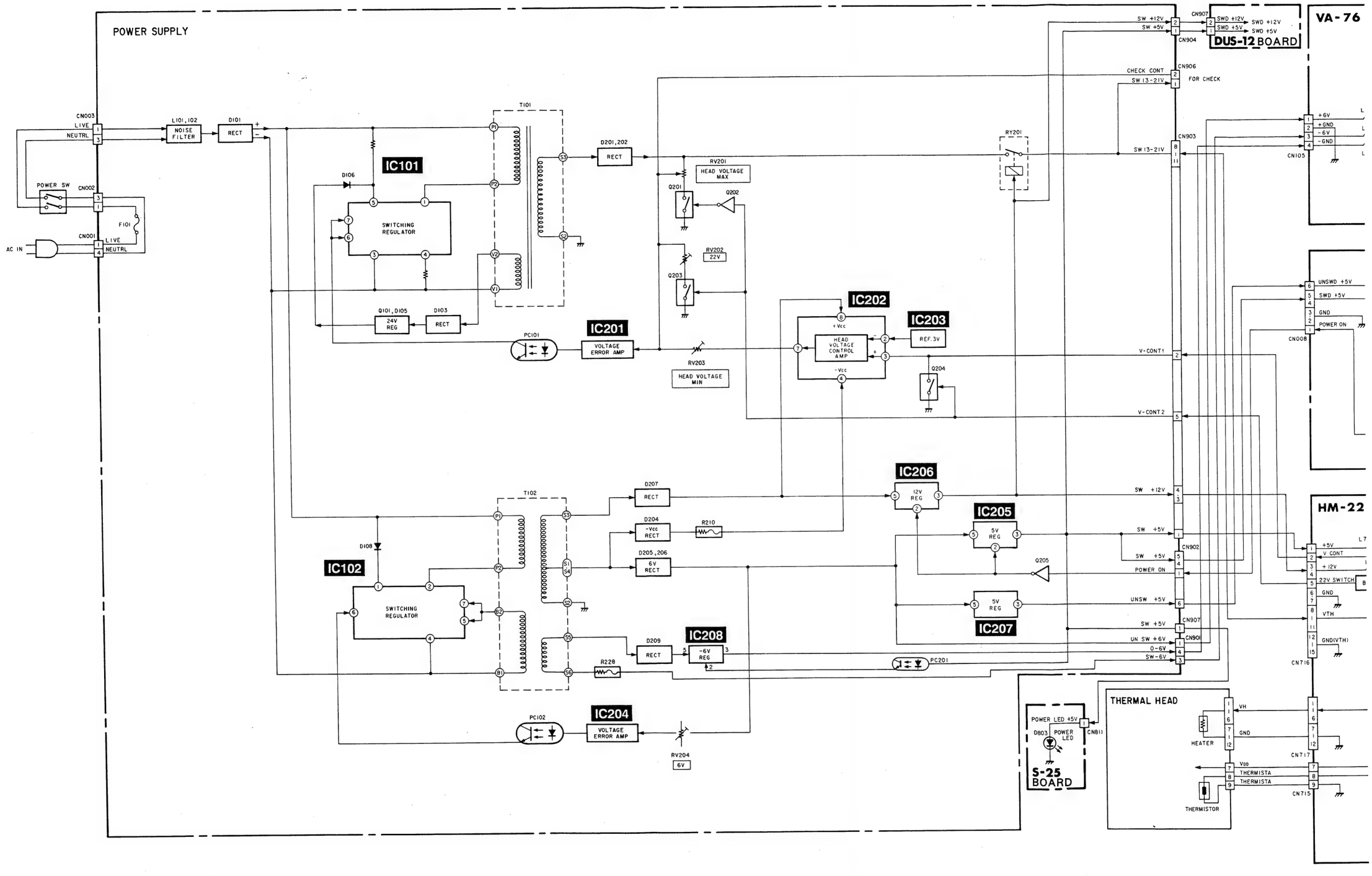

HM-22 BOARD
IC402
D/A CONVERTER
IC403
MAIN MASKING ROM
IC405
LATCH
IC704
GAMMA ROM
IC701
HEAD CONTROL
IC713
IC702
OPTION RAM
IC703
OPTION RAM
IC509
GATE ARRAY
IC510
MEMORY CONTROL
IC515 (5/6)
DL501 DELAY
ANALOG VIDEO (VA-76)
THERMAL HEAD
TO SYSTEM CONTROL
CN715
CN724
CN714
CN002
CN004
X501 20MHz
X703 24MHz
X701 20MHz
S706 RESET
20MHz
2Vp-p
IC510 (70) SOURCE/CAPTURE

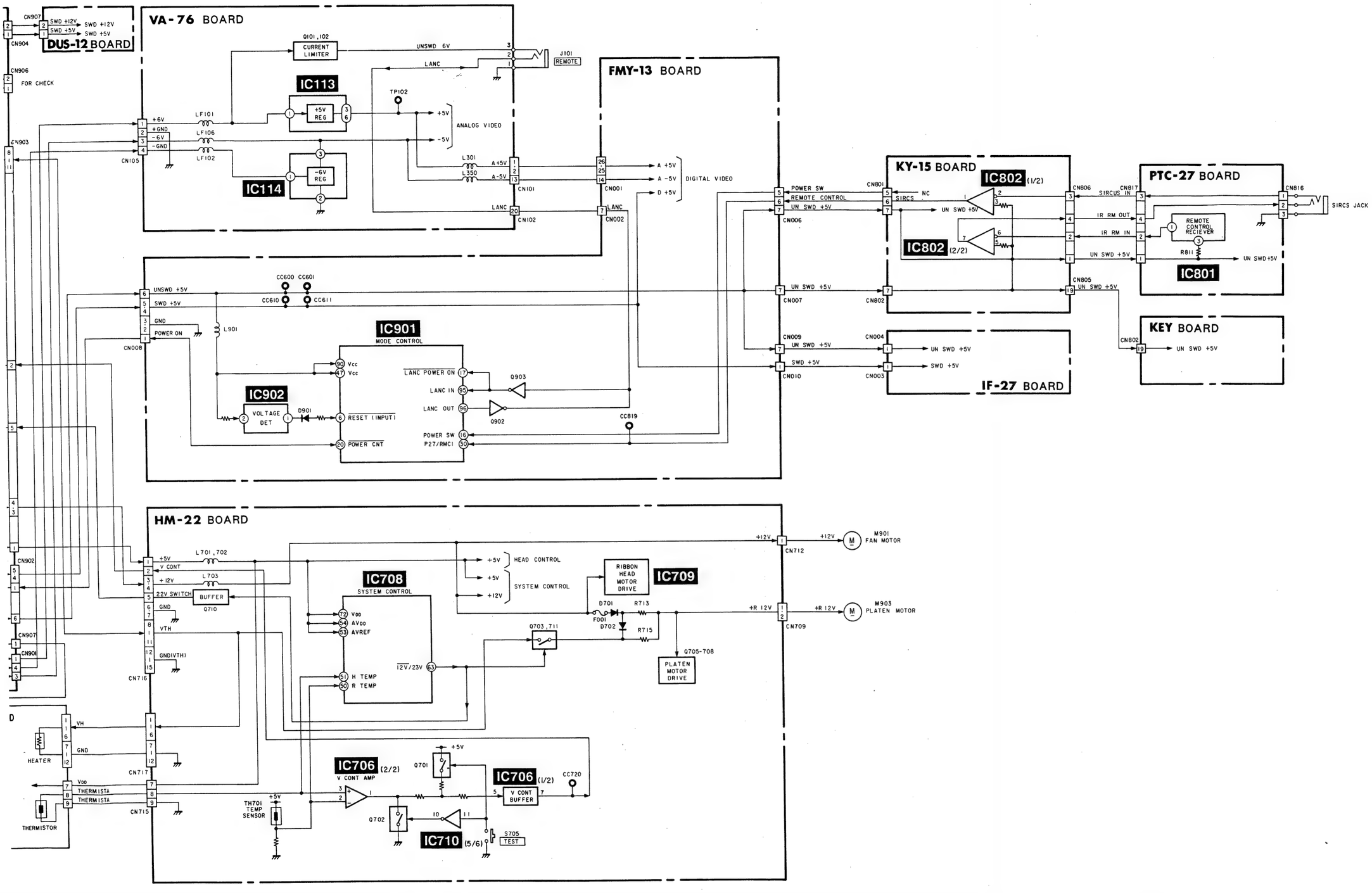
3-5. SYSTEM CONTROL BLOCK DIAGRAM




HM-22 BOARD
IC708
MECHANISM CONTROL
DIGITAL VIDEO BLOCK
IC701 (1/2)
S706 RESET
CC708 CS
CC707 SCK
CC706 SO
CC705 SI
CC704 RESET
CN706
CS
SCK
SO
SI
RESET
CN722
RIBBON DOOR SW
RIBBON CODE LED A
RIBBON CODE SEN A
IC711 (2/4) RIBBON CODE DET
CN704
CN806
HEAD POSI LED A
HEAD POSI SEN A
IC707 (1/4) HEAD POSITION A DET
HEAD POSI LED B
HEAD POSI SEN B
IC707 (2/4) HEAD POSITION B DET
CN710
CN723
P TRAY LED
P TRAY SEN
IC711 (1/4) PAPER TRAY DET
CN721
W DOOR SW
CN719
KEY
FOR CHECK
RIBBON MARK LED A
RIBBON MARK SEN A
IC711 (3/4) RIBBON MARK A DET
RIBBON MARK LED B
IC711 (4/4) RIBBON MARK B DET
RIBBON MARK SEN B
CN705
CN718
J DET LED
J DET SEN
IC712 (1/4) JAMMING DET
CN702
PAPER EDGE LED
PAPER EDGE SEN
IC712 (2/4) PAPER EDGE DET
CN701
RIBBON CTRG SW
CN703
PAPER EJECT LED
PAPER EJECT SEN
IC712 (3/4) PAPER EJECT DET
CN711
ROLLER POSI LED A
ROLLER POSI SEN A
IC707 (3/4) ROLLER POSITION DET
ROLLER POSI LED B
ROLLER POSI SEN B
IC707 (4/4) ROLLER POSITION DET
+5V
3V
1.6V
R DOOR
R CODE
H POSI A
H POSI B
P TRAY
W DOOR
SWITCH
R MARK A
R MARK B
J DET
P EDGE
P CRTG
P EJECT
R POSI A
R POSI B
RESET
20M/24M
RR(PRINT)
PRST(PRINT START)
GAM 0
GAM 7
COLOR A
COLOR B
TMG
D0
D7
A0A
A3A
CS0
CS1
CS2
WR
H TEMP
R TEMP
12V/23V
IC710 (1/6)-(4/6)
S MTR 0
S MTR 1
S MTR 2
S MTR 3
Q705-708
PLATEN MOTOR DRIVE
M903 PLATEN MOTOR
CN709
IC709
R MTR X
R MTR Y
RIBBON MOTOR DRIVE
RIBBON MOTOR Y
RIBBON MOTOR X
CN708
H MTR X
H MTR Y
HEAD MOTOR DRIVE
HEAD MOTOR Y
HEAD MOTOR X
CN707
IC710 (6/6)
FAN
Q709 FAN MOTOR DRIVE
FAN MOTOR
M901 FAN MOTOR
CN712
INPUT 0
INPUT 1
INPUT 2
OUTPUT 1
CN713
XTAL
EXTAL
X702 16MHz
DIGITAL VIDEO
TH701 TEMP SENSOR
IC706 (2/2) V CONT AMP
Q701
IC706 (1/2) V CONT BUFFER
CC720 V CONT
S705 TEST
IC710 (5/6)
Q702
Q703,711
D702
D701
R715
R713
F001
Q710 BUFFER
THERMAL HEAD
THERMISTA
THERMISTOR
CN715
VH
HEAT
GND
CN717
CN716
CN903
VTH
22V SWITCH
+12V
V CONT
+5V
POWER SUPPLY
CN902
UNSW +5V
SWD +5V
POWER ON
SW-216 BOARD
M0802 RIBBON MOTOR
CN807
SW-215 BOARD
M0801 HEAD MOTOR
CN806
DUS-12 BOARD
IC902
CN911
INPUT 0
INPUT 1
INPUT 2
NC
IC901
EJECT MOTOR DRIVER
SW-39 BOARD
CN908 ARM HOME LED
CN913
ARM HOME SEN
PH901 ARM HOME SENSOR
SU-10 BOARD
CN912 EJECT MOTOR X
CN916
EJECT MOTOR Y
M901 EJECT MOTOR

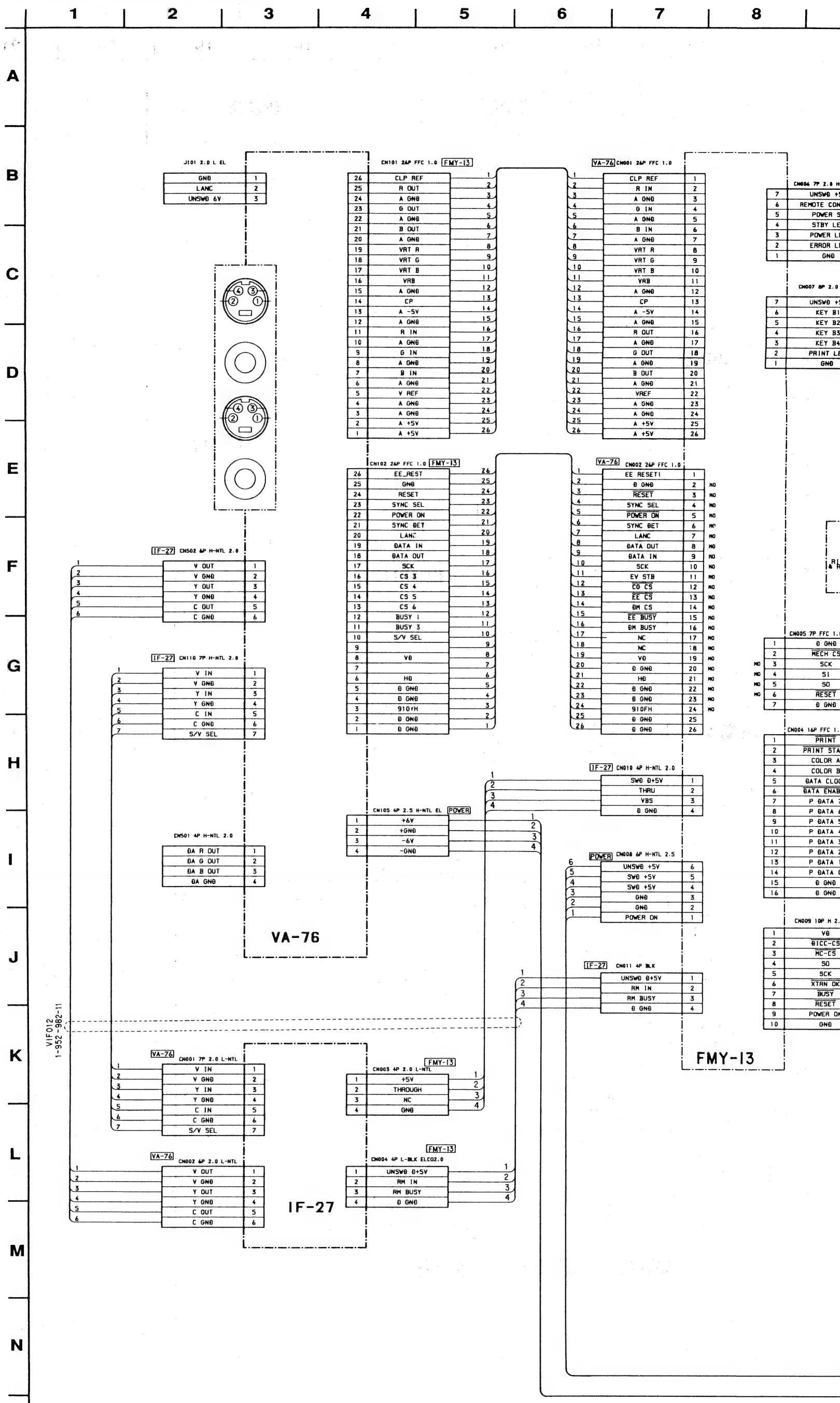
3-6. POWER SUPPLY BLOCK DIAGRAM




DUS-12 BOARD
CN907
SWD +12V
SWD +5V
SWD +12V
SWD +5V
CN904
CN906
FOR CHECK
VA-76 BOARD
Q101,102
CURRENT LIMITER
UNSWD 6V
LANC
J101
REMOTE
IC113
+5V REG
TP102
+5V
-5V
ANALOG VIDEO
+6V
+GND
-6V
-GND
LF101
LF106
LF102
CN105
CN903
IC114
-6V REG
L301
L350
A+5V
A-5V
CN101
LANC
CN102
FMY-13 BOARD
26
25
14
CN001
A +5V
A -5V
D +5V
DIGITAL VIDEO
LANC
CN002
POWER SW
REMOTE CONTROL
UN SWD +5V
CN006
CN801
KY-15 BOARD
IC802 (1/2)
NC
SIRCS
UN SWD +5V
IC802 (2/2)
CN806
SIRCUS IN
IR RM OUT
IR RM IN
UN SWD +5V
CN805
UN SWD +5V
CN817
PTC-27 BOARD
REMOTE CONTROL RECIEVER
R811
UN SWD +5V
IC801
CN816
SIRCS JACK
KEY BOARD
CN802
UN SWD +5V
CC600 CC601
CC610 CC611
UNSWD +5V
SWD +5V
GND
POWER ON
CN008
L901
IC901
MODE CONTROL
Vcc
Vcc
LANC POWER ON
LANC IN
LANC OUT
POWER SW P27/RMC1
Q903
Q902
IC902
VOLTAGE DET
D901
RESET (INPUT)
POWER CNT
CC819
UN SWD +5V
CN007
CN802
CN009
UN SWD +5V
SWD +5V
CN010
CN004
CN003
IF-27 BOARD
HM-22 BOARD
L701,702
+5V
V CONT
+12V
L703
22V SWITCH
BUFFER
Q710
GND
VTH
GND(VTH)
CN716
IC708
SYSTEM CONTROL
VDD
AVDD
AVREF
12V/23V
H TEMP
R TEMP
+5V
HEAD CONTROL
+5V
SYSTEM CONTROL
+12V
RIBBON HEAD MOTOR DRIVE
IC709
D701
F001
D702
R713
R715
Q703,711
Q705-708
PLATEN MOTOR DRIVE
+12V
CN712
M901
FAN MOTOR
+R 12V
CN709
M903
PLATEN MOTOR
VH
GND
HEATER
VDD
THERMISTA
THERMISTA
THERMISTOR
CN717
CN715
IC706 (2/2)
V CONT AMP
IC706 (1/2)
V CONT BUFFER
CC720
Q701
Q702
TH701 TEMP SENSOR
IC710 (5/6)
S705
TEST

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM



7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18

FMKY
1-952-986-11

CN724 16P L 1.0

PRINT	1
PRINT START	2
COLOR A	3
COLOR B	4
GND	5
DRV	6
GND	7
DATA A	8
DATA B	9
GND	10
STRB	11
GND	12
HCLK	13
GND	14
THERMISTA	15
TIMING PULSE	16

CN709 6P 2.0 L-NTL

+R12V	1
+R12V	2
ø1	3
ø2	4
ø3	5
ø4	6

CN712 2P 2.0 L-NTL

+12V	1
FAN MOTOR	2

CN719 2P 2.0 L-NTL

KEY	1
GND	2

CN803 4P

RIBON CODE LED A	1
RIBON CODE SEN A	2
GND	3
RIBON DOOR SW	4
NC	5

SW-210
RIBBON CODE SENSOR & RIBBON DOOR SENSOR

CN704 3P 1.5 L-NTL

RIBON CODE LED A	1
RIBON CODE SEN A	2
GND	3

CN005 7P FFC 1.0 HM-22

ø GND	1
MECH CS	2
SCK	3
SI	4
SO	5
RESET	6
ø GND	7

FMY-13 CN706 7P FCC 1.0

ø GND	7
*CS	6
SCK	5
SO	4
SI	3
RESET	2
ø GND	1

CN004 16P FFC 1.0 HM-22

PRINT	1
PRINT START	2
COLOR A	3
COLOR B	4
DATA CLOCK	5
DATA ENABLE	6
P DATA 7	7
P DATA 6	8
P DATA 5	9
P DATA 4	10
P DATA 3	11
P DATA 2	12
P DATA 1	13
P DATA 0	14
ø GND	15
ø GND	16

FMY-13 CN714 16P FFC 1.0

PRINT	16
PRINT START	15
COLOR A	14
COLOR B	13
DATA CLOCK	12
DATA ENABLE	11
P DATA 7	10
P DATA 6	9
P DATA 5	8
P DATA 4	7
P DATA 3	6
P DATA 2	5
P DATA 1	4
P DATA 0	3
GND	2
GND	1

CN009 10P H 2.0

VØ	
ØICC-CS	
MC-CS	
SO	
SCK	
XTRN OK	
BUSY	
RESET	
POWER ON	
GNØ	

FMY-13

BUS-12 CN713 5P 1.5 L-NTL

INPUT 0	ME
INPUT 1	ME
INPUT 2	ME
OUTPUT 1	ME
GND	ME

POWER
CN716 15P 2.0 L-NTL AMP

+5V	
V-CONT	
+12V	
+12V	
22V SWITCH	
GND	
GND	
VTH	
VTH	
VTH	
GND (VTH)	
GND (VTH)	
GND (VTH)	
GND (VTH)	

HM-22

THERMAL HEAD
CN717 12P FFC 1.0

VH	1
VH	2
VH	3
VH	4
VH	5
VH	6
GND	7
GND	8
GND	9
GND	10
GND	11
GND	12

HM-22 FFC 1.0

GND	12
GND	11
GND	10
GND	9
GND	8
GND	7
VH	6
VH	5
VH	4
VH	3
VH	2
VH	1

THERMAL HEAD
CN715 10P FFC 1.0

GND	10
DRV	9
DATA B	8
DATA A	7
STRB	6
HØ CLK	5
VDD	4
THERMISTA	3
THERMISTA	2
N.C.	1

HM-22 FFC 1.0

N.C.	10
THERMISTA	9
THERMISTA	8
VDD	7
HØ CKL	6
STRB	5
DATA A	4
DATA B	3
DRV	2
GND	1

THERMAL HEAD

HR-54

CN701 2P 1.5 L-NTL

RIBBON CTRG SW	1
GND	2

HM-22 CN809 2P 1.5 L BLU

RIBBON CRTG SEN	1
GND	2

SW-214
RIBBON CASSETTE SENSOR

HP-121

CN702 3P 1.5 L-NTL

PAPER EDGE LED	1
PAPER EDGE SEN	2
GND	3

HM-22 CN801 3P 1.5 L WHT

PAPER EDGE LED	1
PAPER EDGE SEN	2
GND	3

SW-208
PAPER EDGE SENSOR

CN703 3P 1.5 L-NTL

PAPER EJECT LED	1
PAPER EJECT SEN	2
GND	3

HMSW41
1-952-975-11

HM-22 CN815 3P 2.0 L-NTL

GND	3
PAPER OUT SEN	2
PAPER OUT LED	1

SW-41

CN723 3P 1.5 L-NTL

PAPER TRAY LED	1
PAPER TRAY SENSOR	2
GND	3

HMSW42
1-952-970-11

HM-22 CN817 3P 2.0 L-YEL

GND	3
PAPER CHECK SEN	2
PAPER CHECK LED	1

SW-42

CN722 2P 1.5 L-NTL

RIBBON DOOR SW	
GND	

FRM-3

CN705 5P FFC 1.0

RIBBON MARK LED A	1
RIBBON MARK SEN A	2
RIBBON MARK LED B	3
RIBBON MARK SEN B	4
GND	5

HM-22 CN804 5P FFC 1.0

RIBBON MARK LED A	1
RIBBON MARK SEN A	2
RIBBON MARK LED B	3
RIBBON MARK SEN B	4
GND	5

SW-211
RIBBON MARK SENSOR

CN707 2P 2.0 L EL REG

HEAD MOTOR X	1
HEAD MOTOR B	2

HR-50

HM-22 CN807 2P 2.0 L EL BLK

RIBBON MOTOR X	1
RIBBON MOTOR Y	2

SW-216
RIBBON MOTOR

CN708 2P 2.0 L EL BLK

RIBBON MOTOR X	1
RIBBON MOTOR Y	2

HH-50

HM-22 CN806 2P 2.0 L EL REG

HEAD MOTOR X	1
HEAD MOTOR B	2

SW-215
HEAD UP/DOWN MOTOR

CN710 5P 1.5 L-NTL

HEAD POSI LED A	ME
HEAD POSI SEN A	ME
HEAD POSI LED B	ME
HEAD POSI SEN B	ME
GND	ME

HH-51

HM-22 CN806 5P 1.5 L REG

HEAD POSI LED A	1
HEAD POSI SEN A	2
HEAD POSI LED B	3
HEAD POSI SEN B	4
GND	5

SW-212
HEAD POSITION SENSOR

CN711 5P 1.5 L-NTL

ROLLER POSI LED A	ME
ROLLER POSI SEN A	ME
ROLLER POSI LED B	ME
ROLLER POSI SEN B	ME
GND	ME

HR-51

SW-22 CN808 5P 1.5 L WHT

ROLLER POSI LED A	1
ROLLER POSI SEN A	2
ROLLER POSI LED B	3
ROLLER POSI SEN B	4
GND	5

SW-213
ROLLER POSITION SENSOR

CN718 3P 1.5 L-NTL

J DET LED	1
J DET LED	2
GND	3

HP-124

HM-22 CN810 3P 1.5 L BLUE

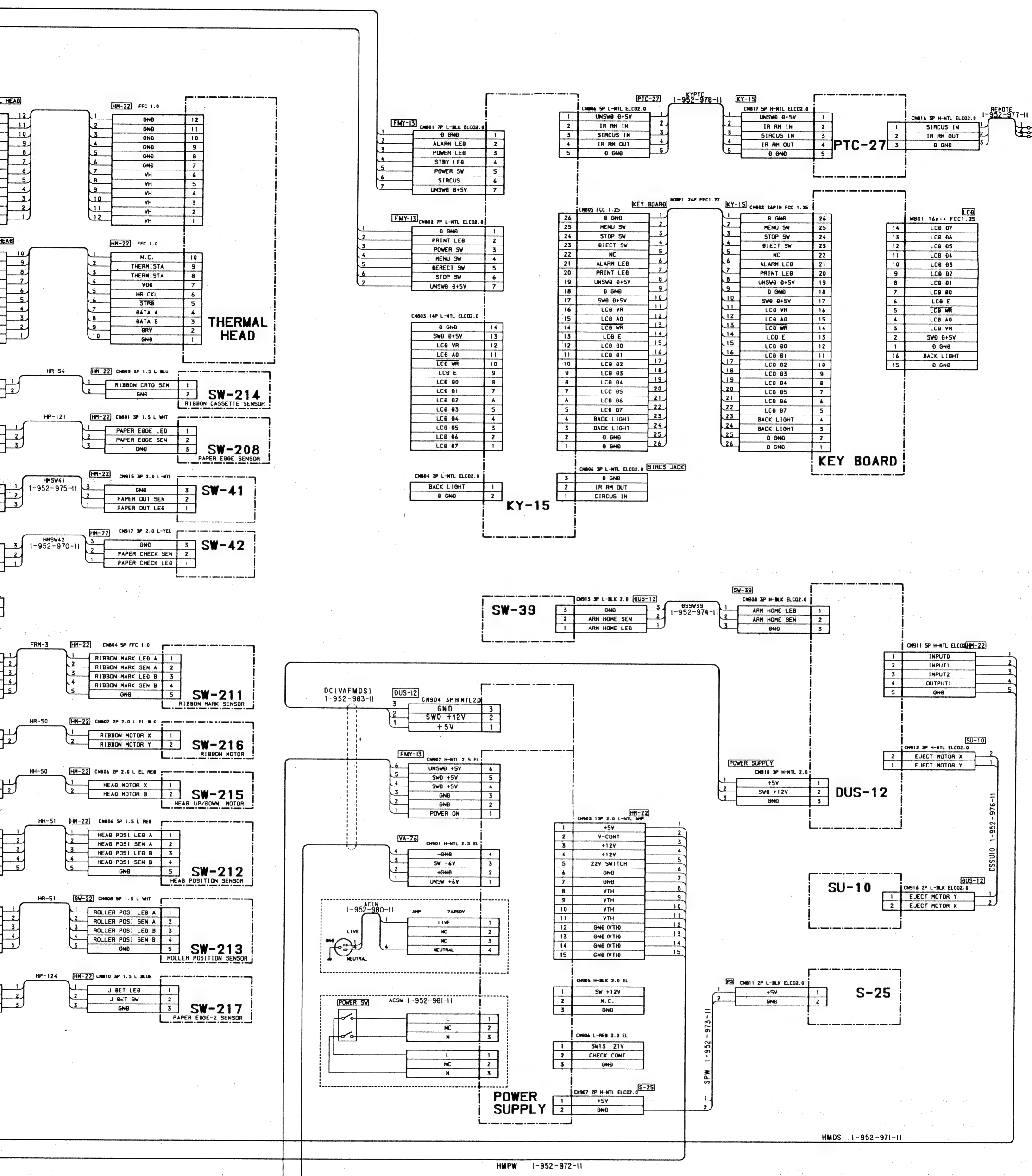
J DET LED	1
J DET SW	2
GND	3

SW-217
PAPER EDGE-2 SENSOR

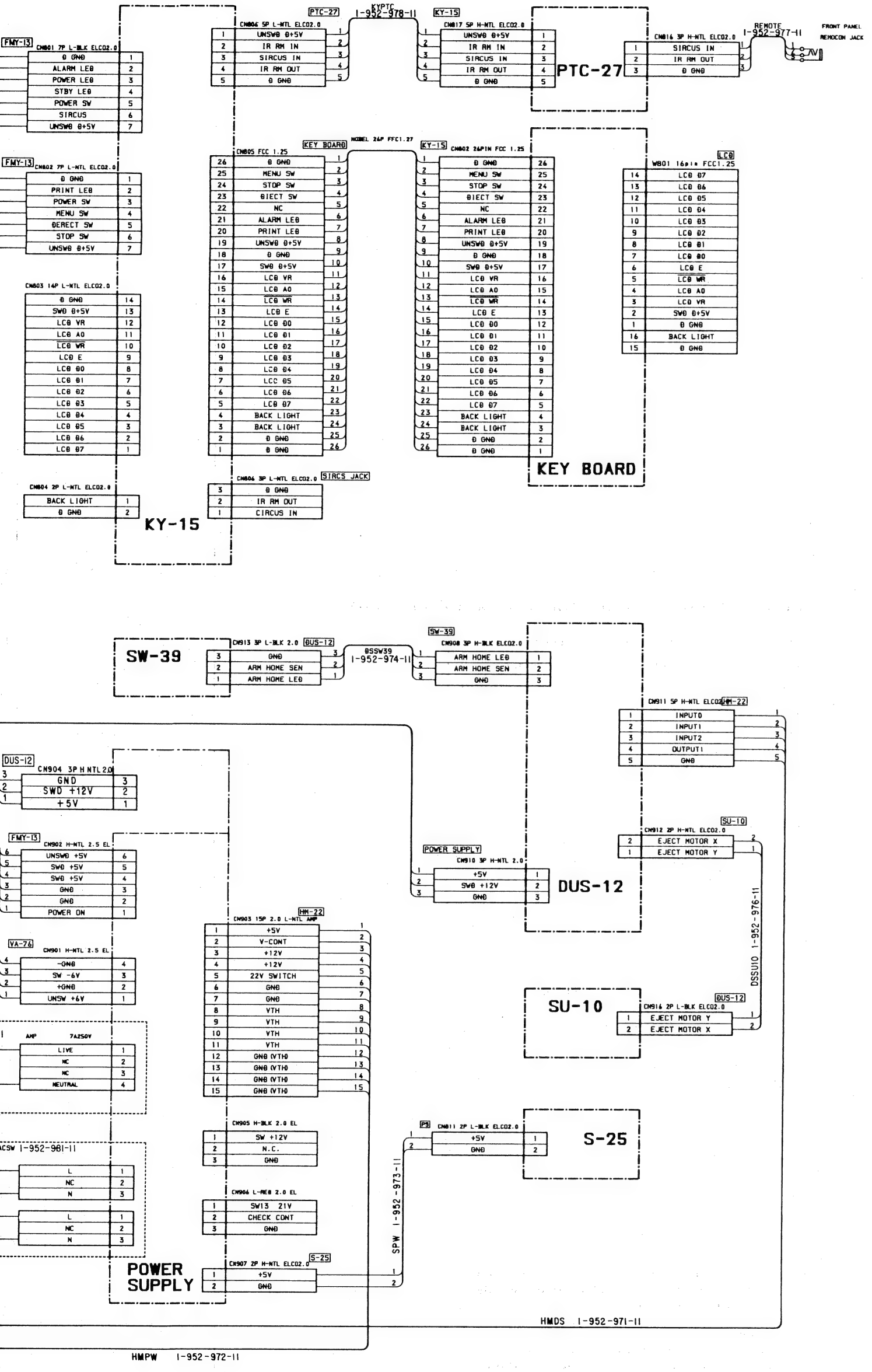
DC(VAFMDS)
1-952-983-

LIVE
GND
NEUTRAL

POWER SW


THERMAL HEAD
HM-22 FFC 1.0
GND 12
GND 11
GND 10
GND 9
GND 8
GND 7
VH 6
VH 5
VH 4
VH 3
VH 2
VH 1
N.C. 10
THERMISTA 9
THERMISTA 8
VDD 7
HD CKL 6
STRB 5
DATA A 4
DATA B 3
DRV 2
GND 1
SW-214
RIBBON CASSETTE SENSOR
HR-54
HM-22 CN809 2P 1.5 L BLU
RIBBON CRTG SEN 1
GND 2
SW-208
PAPER EDGE SENSOR
HP-121
HM-22 CN801 3P 1.5 L WHT
PAPER EDGE LED 1
PAPER EDGE SEN 2
GND 3
SW-41
HMSW41
1-952-975-11
HM-22 CN915 3P 2.0 L-NTL
GND 3
PAPER OUT SEN 2
PAPER OUT LED 1
SW-42
HMSW42
1-952-970-11
HM-22 CN917 3P 2.0 L-YEL
GND 3
PAPER CHECK SEN 2
PAPER CHECK LED 1
SW-211
RIBBON MARK SENSOR
FRM-3
HM-22 CN804 5P FFC 1.0
RIBBON MARK LED A 1
RIBBON MARK SEN A 2
RIBBON MARK LED B 3
RIBBON MARK SEN B 4
GND 5
SW-216
RIBBON MOTOR
HR-50
HM-22 CN807 2P 2.0 L EL BLK
RIBBON MOTOR X 1
RIBBON MOTOR Y 2
SW-215
HEAD UP/DOWN MOTOR
HH-50
HM-22 CN806 2P 2.0 L EL RED
HEAD MOTOR X 1
HEAD MOTOR B 2
SW-212
HEAD POSITION SENSOR
HH-51
HM-22 CN806 5P 1.5 L RED
HEAD POSI LED A 1
HEAD POSI SEN A 2
HEAD POSI LED B 3
HEAD POSI SEN B 4
GND 5
SW-213
ROLLER POSITION SENSOR
HR-51
SW-22 CN808 5P 1.5 L WHT
ROLLER POSI LED A 1
ROLLER POSI SEN A 2
ROLLER POSI LED B 3
ROLLER POSI SEN B 4
GND 5
SW-217
PAPER EDGE-2 SENSOR
HP-124
HM-22 CN810 3P 1.5 L BLUE
J DET LED 1
J DET SW 2
GND 3
FMY-13
CN801 7P L-BLK ELCO2.0
GND 1
ALARM LED 2
POWER LED 3
STBY LED 4
POWER SW 5
SIRCUS 6
UNSW 5+5V 7
FMY-13
CN802 7P L-NTL ELCO2.0
GND 1
PRINT LED 2
POWER SW 3
MENU SW 4
DERECT SW 5
STOP SW 6
UNSW 5+5V 7
CN803 14P L-NTL ELCO2.0
GND 14
SW5 5+5V 13
LCD VR 12
LCD AO 11
LCD WR 10
LCD E 9
LCD D0 8
LCD D1 7
LCD D2 6
LCD D3 5
LCD D4 4
LCD D5 3
LCD D6 2
LCD D7 1
CN804 2P L-NTL ELCO2.0
BACK LIGHT 1
GND 2
KY-15
PTC-27
CN806 5P L-NTL ELCO2.0
UNSW 5+5V 1
IR RM IN 2
SIRCUS IN 3
IR RM OUT 4
GND 5
KYPTC
1-952-978-11
KY-15
CN817 5P H-NTL ELCO2.0
UNSW 5+5V 1
IR RM IN 2
SIRCUS IN 3
IR RM OUT 4
GND 5
PTC-27
CN816 3P H-NTL ELCO2.0
SIRCUS IN 1
IR RM OUT 2
GND 3
REMOTE
1-952-977-11
KEY BOARD
CN805 FCC 1.25
GND 26
MENU SW 25
STOP SW 24
EJECT SW 23
NC 22
ALARM LED 21
PRINT LED 20
UNSW 5+5V 19
GND 18
SW5 5+5V 17
LCD VR 16
LCD AO 15
LCD WR 14
LCD E 13
LCD D0 12
LCD D1 11
LCD D2 10
LCD D3 9
LCD D4 8
LCD D5 7
LCD D6 6
LCD D7 5
BACK LIGHT 4
BACK LIGHT 3
GND 2
GND 1
KEY BOARD
MODEL 26P FFC1.27
KY-15
CN802 26PIN FCC 1.25
LCD
W801 16pin FCC1.25
LCD D7 14
LCD D6 13
LCD D5 12
LCD D4 11
LCD D3 10
LCD D2 9
LCD D1 8
LCD D0 7
LCD E 6
LCD WR 5
LCD AO 4
LCD VR 3
SW5 5+5V 2
GND 1
BACK LIGHT 16
GND 15
SW-39
CN913 3P L-BLK 2.0
DUS-12
GND 3
ARM HOME SEN 2
ARM HOME LED 1
BSSW39
1-952-974-11
SW-39
CN908 3P H-BLK ELCO2.0
ARM HOME LED 1
ARM HOME SEN 2
GND 3
DC(VAFMDS)
1-952-983-11
DUS-12
CN904 3P H NTL2.0
GND 3
SW5 +12V 2
+5V 1
FMY-13
CN902 H-NTL 2.5 EL
UNSW5 +5V 6
SW5 +5V 5
SW5 +5V 4
GND 3
GND 2
POWER ON 1
VA-76
CN901 H-NTL 2.5 EL
-GND 4
SW -6V 3
+GND 2
UNSW +6V 1
HM-22
CN903 15P 2.0 L-NTL AMP
+5V 1
V-CONT 2
+12V 3
+12V 4
22V SWITCH 5
GND 6
GND 7
VTH 8
VTH 9
VTH 10
VTH 11
GND (VTH) 12
GND (VTH) 13
GND (VTH) 14
GND (VTH) 15
ACIN
1-952-980-11
AMP 7A250V
LIVE 1
NC 2
NC 3
NEUTRAL 4
POWER SW
ACSW 1-952-981-11
L 1
NC 2
N 3
L 1
NC 2
N 3
CN905 H-BLK 2.0 EL
SW +12V 1
N.C. 2
GND 3
CN906 L-RED 2.0 EL
SW13 21V 1
CHECK CONT 2
GND 3
POWER SUPPLY
S-25
CN907 2P H-NTL ELCO2.0
+5V 1
GND 2
POWER SUPPLY
CN910 3P H-NTL 2.0
+5V 1
SW5 +12V 2
GND 3
DUS-12
SU-10
CN912 2P H-NTL ELCO2.0
EJECT MOTOR X 2
EJECT MOTOR Y 1
DSSU10 1-952-976-11
SU-10
CN916 2P L-BLK ELCO2.0
EJECT MOTOR Y 1
EJECT MOTOR X 2
DUS-12
S-25
P3
CN811 2P L-BLK ELCO2.0
+5V 1
GND 2
SPW 1-952-973-11
CN911 5P H-NTL ELCO2
INPUT0 1
INPUT1 2
INPUT2 3
OUTPUT1 4
GND 5
HMDS 1-952-971-11
HMPW 1-952-972-11

19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27



4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

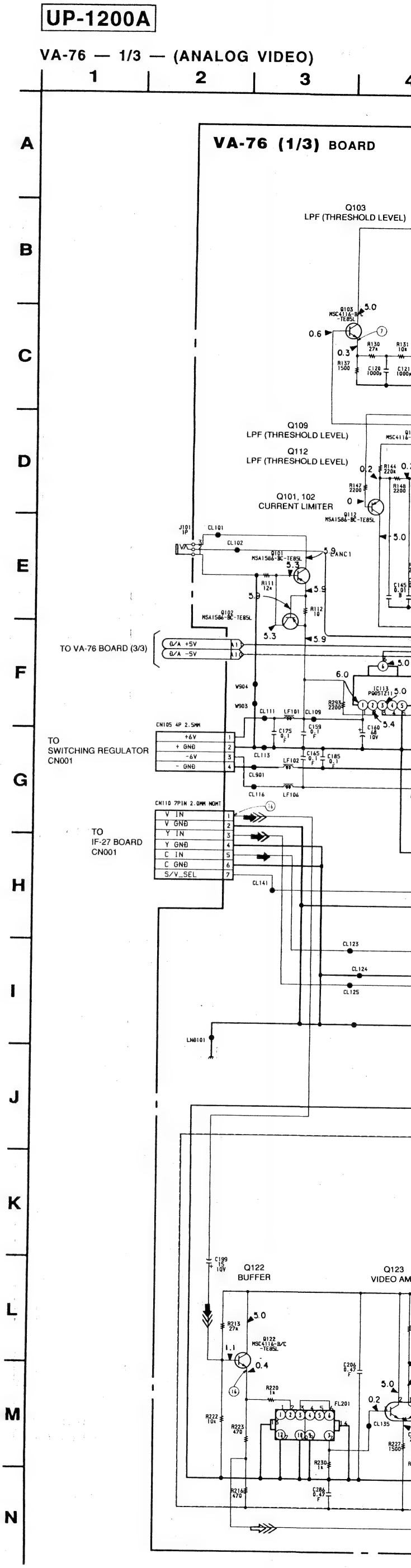
THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

- **For Printed Wiring Boards.**
- ▬▬ : Soldering Side.
- ▬▬ : Component Side.

- **For Schematic Diagrams.**
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/10W unless otherwise noted.
  kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted.
  pF: μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : fusibe resistor.
- ▭ : adjustment for repeair.
- ▬▬ : B+ Line.
- - - - : B− Line.
- Voltages are dc between ground and measurement points.
- Readings are taken with a color-bar signal input.
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltage variations may be noted due to normal production tolerances.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et par une marque ⚠ sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces de numéro spécifié.



VA-76 (1/3) BOARD

IC103 SYNC SEP

IC102 SYNC SEP

IC106 SYNC DET

IC104 LOOP FILTER

IC111 BUFFER

IC108 MMV

IC126 2CH MULTI / DEM

IC109 INVERTER

IC113 +6V SERIES REG

IC114 +6V SERIES REG

IC128 SWITCH

IC130 SYNC SIGNAL GENERATOR

IC121 DIGITAL COMB FILTER

IC120 X3 FSC

Q104 LPF (THRESHOLD LEVEL)

Q108 PEDESTAL CLAMP

Q103 LPF (THRESHOLD LEVEL)

Q110, 111, 125 AMP BUFFER

Q113 TRAPEZOIDE WAVE FORMER

Q109 LPF (THRESHOLD LEVEL)

Q112 LPF (THRESHOLD LEVEL)

Q101, 102 CURRENT LIMITER

Q122 BUFFER

Q123 VIDEO AMP

Q119 VIDEO AMP

Q118, 124 SYNC TIP CLAMP

Q117, 121 C BUFFER

CN105 4P 2.5MM
+6V
+ GND
-6V
- GND

CN110 7PIN 2.0MM MOMT
V IN
V GND
Y IN
Y GND
C IN
C GND
S/V_SEL

• **SIGNAL PATH**

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡	➡
PB	⇨	⇨	⇨

10 11 12 13 14 15 16 17 18 19 20 21

IC106 SYNC DET

IC104 LOOP FILTER

IC107 SYNC SIGNAL GENERATOR

IC101

TO VA-76 BOARD (2/3)

Q110, 111, 125 AMP BUFFER

IC111 BUFFER

IC112 SWITCH SAMPLING GATE

Q113 TRAPEZOIDE WAVE FORMER

IC150 INVERTER

TO VA-76 BOARD (2/3)

IC110 MMV (DELAY) SAMPLING PULSE GEN.

IC130 SYNC SIGNAL GENERATOR

IC119 PULSE GENERATOR

IC120 X3 FSC

Q117, 121 C BUFFER

IC125 Y OUT SELECTOR

IC122

IC123 C OUT SELECTOR

TO VA-76 BOARD (3/3)

ANALOG VIDEO **VA-76**

ANALOG VIDEO **VA-76**

• **SIGNAL PATH**

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡	➡
PB	⇨	⇨	⇨

15 | 16 | 17 | 18 | 19 | 20 | 21

IC107
SYNC SIGNAL GENERATOR

IC101

IC150
INVERTER

IC110
MMV (DELAY) SAMPLING PULSE GEN.

IC125
Y OUT SELECTOR

IC122

IC123
C OUT SELECTOR

TO VA-76 BOARD (2/3)

TO VA-76 BOARD (2/3)

TO VA-76 BOARD (2/3)

TO VA-76 BOARD (3/3)

UP-1200A

VA-76 — 2/3 — (ANALOG VIDEO)

• SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡	
PB			

• SI

VID
A
A
A

1 2 3 4 5 6 7 8 9

A B C D E F G H I J K L M

VA-76 (2/3) BOARD

Q910 MSA1586 WINDOW
Q301 2SC4207 WINDOW
Q310 MSA1586 BLACK LEVEL DETECT
Q305 MSC4116 WHITE REF PULSE GENERATOR
Q307 2SA1618 WHITE REF PULSE GENERATOR

TO VA-76 (1/3) +5V A2
Q309,311 XN4501 PEDESTAL CLAMP
TO VA-76 (3/3) GND A1
TO VA-76 (1/3) -5V A3
TO VA-76 (1/3) Y A6
TO VA-76 (3/3) TP
TO VA-76 (1/3) SYTH
TO VA-76 (1/3) EXTY
TO VA-76 (3/3) S
TO VA-76 (1/3) BEC_SYNC
TO VA-76 (1/3) R
TO VA-76 (1/3) SC A5

IC306 µPC31962 SYNC SEP
Q902 MSC4116 BUFFER
IC320 NJM4560M Y AGC SLICE AMP
IC301 CXA1521M AGC NCA
IC311 CXA1585Q R.G.B.DECODER
IC307, IC308 M62352GP EVR
Q361 MSC4116 BUFFER
Q335 2SC4207
IC312 TL431CML 2.5V REG
IC313 NJM4560M BUFFER

• SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡➡	
PB			

• SIGNAL PATH

VIDEO SIGNAL	REC	PB
ANALOG R	➡ R	⇨ R
ANALOG G	➡ G	⇨ G
ANALOG B	➡ B	⇨ B

6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17

Q310
MSA1586
BLACK LEVEL DETECT

Q305
MSC4116
WHITE REF PULSE GENERATOR

Q307
2SA1618
WHITE REF PULSE GENERATOR

Q302
MSC4116
BUFFER

Q306
MSA1586
BUFFER

Q308
MSC4116
BUFFER

Q360
XN4601
BLK LEVEL

Q303
XN4601
BUFFER

Q304
XN4601
WHITE REF LEVEL DET

IC303 IC304
LM324DR

IC320
NJM4560M
Y AGC SLICE AMP

IC301
CXA1521M
AGC NCA

IC302
MC74HC4053F
CLAMP

IC311
CXA1585Q
R.G.B.DECODER

IC309
AK6420F
EEP ROM

Q902
MSC4116
BUFFER

Q321
2SC4207
R +6dB AMP

Q316,320
MSC4116
R +6dB AMP

Q334
MSC4116
SC AMP

Q335
2SC4207
SC AMP

Q901
MSA1586
BUFFER

Q328
MSC4116
BUFFER

IC312
TL431CML
2.5V REG

IC313
NJM4560M
BUFFER

IC314
LM324DR
BUFFER

Q336
MSA1586
BUFFER

Q330
2SC4207
B +6dB AMP

Q326,329
MSC4116
B +6dB AMP

Q324
2SC4207
G +6dB AMP

Q322,323
MSC4116
G +6dB AMP

SIGNAL PATH

DEO SIGNAL	REC	PB
ANALOG R	➡ R	⇨ R
ANALOG G	➡ G	⇨ G
ANALOG B	➡ B	⇨ B

10 11 12 13 14 15 16 17 18 19 20 21

Q302 MSC4116 BUFFER
Q306 MSA1586 BUFFER
Q308 MSC4116 BUFFER
Q360 XN4601 BLK LEVEL
Q303 XN4601 BUFFER
Q304 XN4601 WHITE REF LEVEL DET

IC303 , IC304
LM324DR

B1 AGC C

TO VA-76 (3/3)

IC302
MC74HC4053F
CLAMP

IC309
AK6420F
EEP ROM

Q321 2SC4207 R +6dB AMP
Q316,320 MSC4116 R +6dB AMP

TO FMY-13 BOARD CN001

Q334 MSC4116 SC AMP
Q901 MSA1586 BUFFER
Q328 MSC4116 BUFFER

IC314
LM324DR
BUFFER

Q336 SA1586 UFFER

Q330 2SC4207 B +6dB AMP
Q326,329 MSC4116 B +6dB AMP
Q324 2SC4207 G +6dB AMP
Q322,323 MSC4116 G +6dB AMP

TO FMY-13 BOARD CN002

B2 ENC SC

• SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			
PB	⇨	⇨	⇨

• SIGNAL PATH

VIDEO SIGNAL
ANALOG R
ANALOG G
ANALOG B

UP-1200A

VA-76 — 3/3 — (ANALOG VIDEO)

1 2 3 4 5 6 7 8 9

A B C D E F G H I J K L M

VA-76 (3/3) BOARD

Q504 MSA1586 R.BUFFER
Q502 MSC4116 R.BUFFER
Q507 2SA1618 R.UPPER LIMITER
Q501 MSC4116 R MIX
Q512 MSA1586 G BUFFER
Q511 MSC4116 G BUFFER
IC501 MC74HC4053F SUPERIMPOSE
Q503 MSA1586 B BUFFER
Q508 MSC4116 B BUFFER
Q505 MSC4116 G MIX G
IC511 CXA1211M VCA
Q515,513 MSC4116 R BUFFER
Q516,519 MSC4116 G BUFFER
Q517,514 MSC4116 B BUFFER
IC507 CXA1211M VCA
IC508 NJM2233BM SWITCH
Q540 2SC4207 VIDEO OUT AMP
Q523, 527 MSC4116 VIDEO OUT AMP
Q530 MSA1586 VIDEO OUT AMP

TO VA-76 (1/3) EVR
TO VA-76 (1/3) B/A +5V
B/A -5V
GNB
B/A
ABNB1
BAB1
CHAR
ERB1
BSYNC1
BBLANK1
CHROMA LEV1
BURST LEV1

SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			
PB	⇨	⇨	⇨

• SIGNAL PATH

VIDEO SIGNAL	REC	PB
ANALOG R		⇨ R
ANALOG G		⇨ G
ANALOG B		⇨ B

7 8 9 10 11 12 13 14 15 16 17

IC501 MC74HC4053F SUPERIMPOSE

Q512 MSA1586 G BUFFER

Q511 MSC4116 G BUFFER

IC504 M50555 CHRACTER GENERATOR

Q503 MSA1586 B BUFFER

Q506 MSC4116 B MIX

Q510 2SA1618 B UPPER LIMITER

Q508 MSC4116 B BUFFER

Q505 MSC4116 G MIX

Q509 2SA1618 G UPPER LIMITER

Q517,514 MSC4116 B BUFFER

Q520 MSC4116 B BUFFER

Q516,519 MSC4116 G BUFFER

IC506 CXA1145M ENCODER

IC508 NJM2233BM SWITCH

Q540 2SC4207 VIDEO OUT AMP

Q523,527 MSC4116 VIDEO OUT AMP

Q530 MSA1586 VIDEO OUT AMP

Q528 2SC4207 Y OUT AMP

Q521,525 MSC4116 Y OUT AMP

Q531 SA1586 Y OUT AMP

Q529 2SC4207 C OUT AMP

Q522,526 MSC4116 C OUT AMP

Q532 MSA1586 C OUT AMP

ANALOG VIDEO

VA-76

ANALOG VIDEO

VA-76

REC	PB
	⇨R
	⇨G
	⇨B

10 11 12 13 14 15 16 17 18 19

TP TO VA-76 (1/3)

IC504
M50555
CHRACTER GENERATOR

HB

Q506
MSC4116
B MIX

Q510
2SA1618
B UPPER LIMITER

S_BUS TO VA-76 (1/3)

CN501 XX

BAR1	1	BA_R_OUT
BAG1	2	BA_G_OUT
BAB1	3	BA_B_OUT
AGND1	4	BA_GND

IC506
CXA1145M
ENCODER

Q520
MSC4116
BUFFER

B2 ENC SC

CN502 6PIN 2.0MM MONT

1	V OUT
2	V GND
3	Y OUT
4	Y GND
5	C OUT
6	C GND

TO
IF-27 BOARD
CN002

Q528
2SC4207
Y OUT AMP

Q521, 525
MSC4116
Y OUT AMP

Q531
SA1586
Y OUT AMP

Q529
2SC4207
C OUT AMP

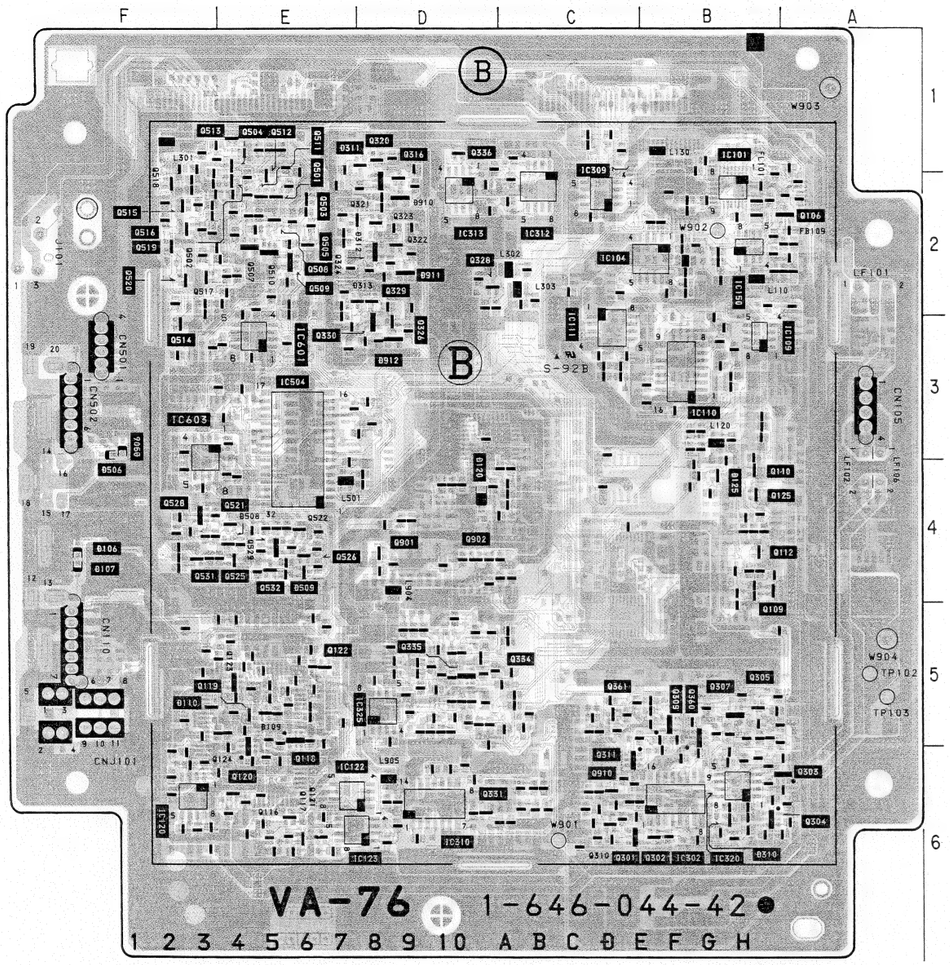
Q522, 526
MSC4116
C OUT AMP

Q532
MSA1586
C OUT AMP

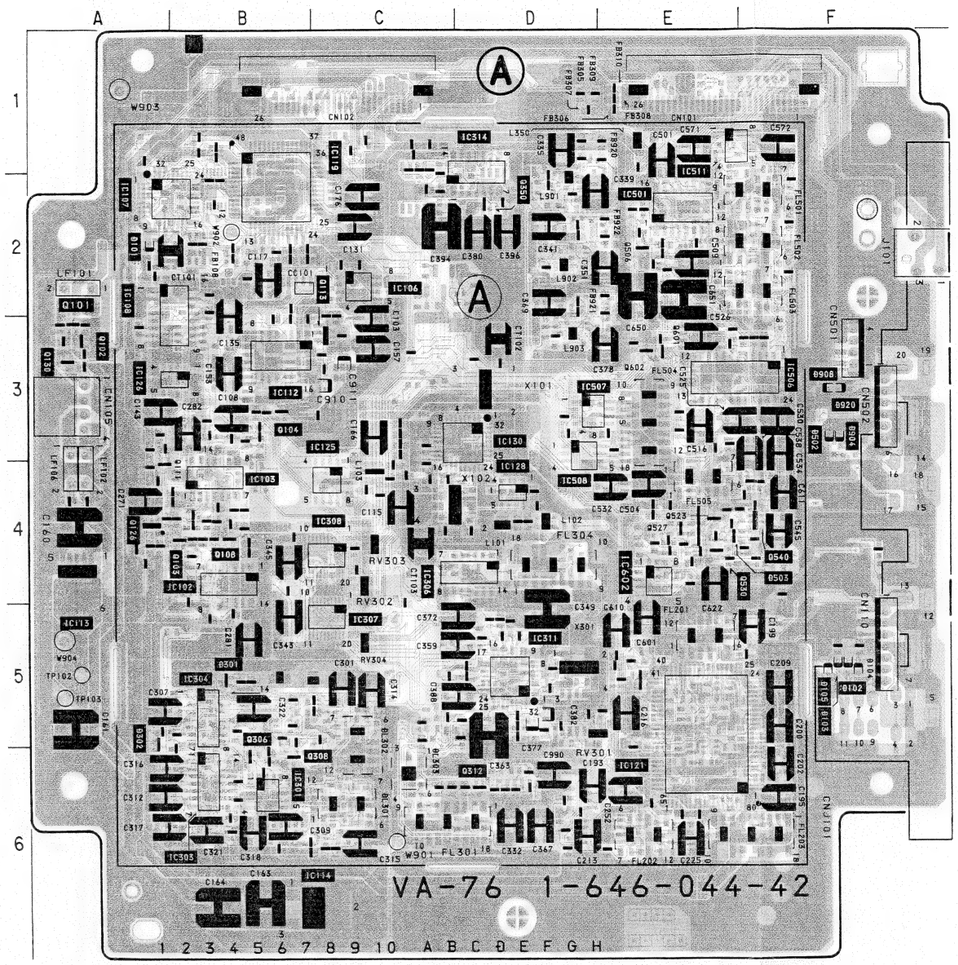
ANALOG VIDEO
VA-76

ANALOG VIDEO
VA-76

VA-76 (ANALOG VIDEO)



VA-76 -SOLDERING SIDE-
1-646-044-42

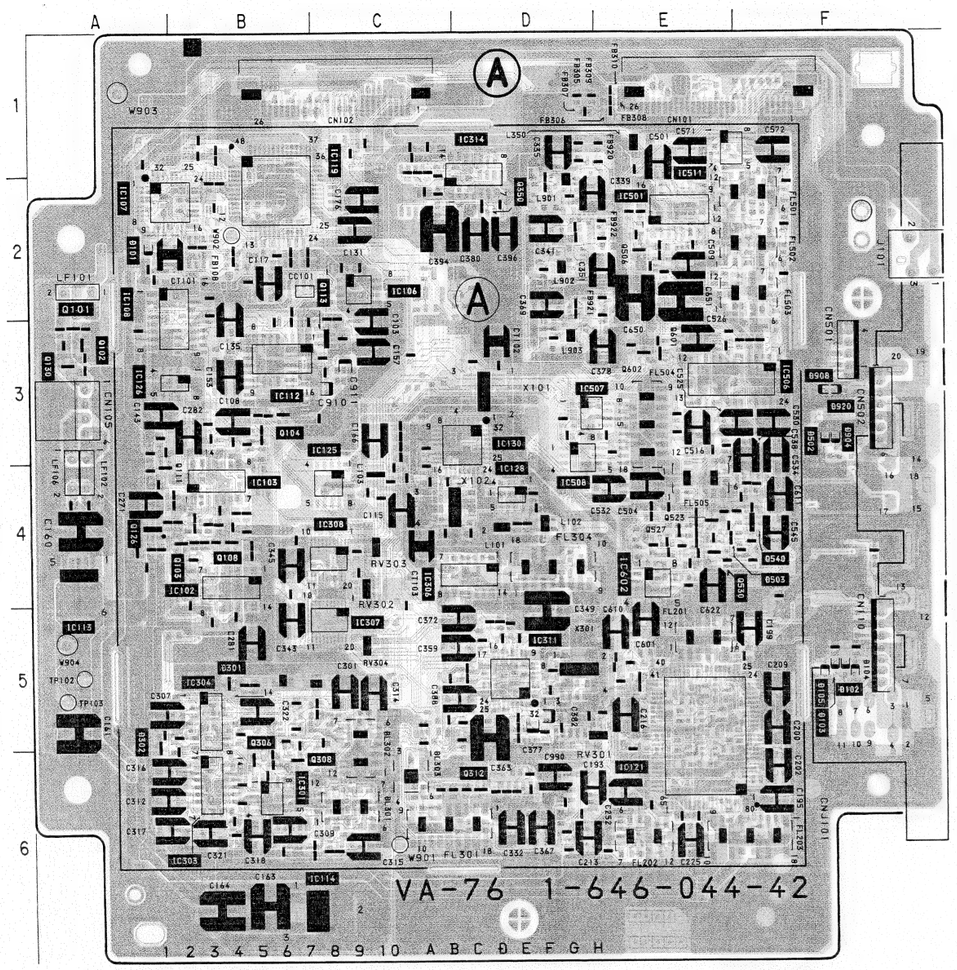


VA-76 -COMPONENT SIDE-
1-646-044-42

VA-76 BOARD

CN101	
CN102	
CN105	A-3
CN110	F-5
CN502	F-3
CT101	B-2
CT102	D-3
D101	A-2
D109	E-5
D110	F-5
D125	B-4
D301	B-5
D302	A-5
D310	B-6
D311	D-1
D312	D-2
D313	D-2
D503	F-4
D508	E-4
D509	E-4
D910	D-2
D911	D-2
D912	D-3
DL301	C-6
DL302	C-5
FB107	B-2
FB108	B-2
FB109	B-2
FB112	F-5
FB121	E-5
FB122	F-4
FB123	F-5
FB304	D-1
FB305	D-1
FB306	D-1
FB307	D-1
FB308	E-1
FB309	D-1
FB310	E-1
FB311	D-1
FB312	D-1
FB313	D-1
FB314	D-1
FB315	D-1
FB316	F-1
FB317	F-1
FB318	F-1
FB319	F-1
FB320	F-1
FB321	F-1
FB322	F-1
FB323	D-1
FB324	E-1
FB325	F-1
FB327	F-1
FB328	C-1
FB329	B-1
FB330	B-1
FB331	C-1
FB332	B-1
FB334	B-1
FB335	A-1

S:SOLDERING



VA-76 -COMPONENT SIDE-
1-646-044-42

VA-76 BOARD

CN101			FB336	C-2	S	IC311	D-5	S	Q309	B-5				
CN102			FB337	C-1	S	IC312	C-2		Q310	C-6				
CN105	A-3	S	FB338	C-1	S	IC313	D-2		Q311	C-6				
CN110	F-5	S	FB339	C-1		IC314	D-1	S	Q316	D-1				
CN502	F-3		FB340	C-1	S	IC320	B-6		Q320	D-1				
			FB343	C-2	S	IC501	E-2	S	Q321	D-2				
CT101	B-2	S	FB344	C-2	S	IC504	E-3		Q322	D-2				
CT102	D-3	S	FB345	C-1		IC506	F-3	S	Q323	D-2				
			FB346	C-2	S	IC507	D-3	S	Q324	E-2				
D101	A-2	S	FB347	B-2		IC508	D-4	S	Q326	D-3				
D109	E-5		FB348	C-3	S	IC511	E-1	S	Q328	D-2				
D110	F-5		FB349	C-2	S	IC601	E-3		Q329	D-2				
D125	B-4		FB510	E-4	S	IC602	E-4	S	Q330	E-3				
D301	B-5	S	FB511	F-4	S	IC603	F-3		Q334	C-5				
D302	A-5	S	FB512	F-4					Q335	E-2				
D310	B-6		FB920	E-1	S	J101	F-2		Q336	D-1				
D311	D-1		FB921	D-2	S				Q350	D-2	S			
D312	D-2		FB922	E-2	S	L101	D-4	S	Q360	B-5				
D313	D-2					L102			Q361	C-5				
D503	F-4	S	FL101	B-1	S	L103	C-4	S	Q501	E-2				
D508	E-4		FL102	F-4		L110	B-2		Q502	F-2				
D509	E-4		FL103	F-4		L120	B-3		Q503	E-2				
D910	D-2		FL104	F-4		L130	B-1		Q504	E-1				
D911	D-2		FL105	F-3	S	L140	C-3	S	Q505	E-2				
D912	D-3		FL106	F-4	S	L141	C-2		Q506	E-2	S			
			FL107	F-4	S	L301	F-1		Q507	E-2				
DL301	C-6	S	FL201	E-4	S	L302			Q508	E-2				
DL302	C-5	S	FL202	E-6	S	L303	C-2		Q509	E-2				
			FL203	F-6	S	L350			Q510	E-2				
FB107	B-2		FL304	D-4	S	L501	E-4		Q511	E-1				
FB108	B-2	S	FL501	F-2	S	L904	D-4		Q512	E-1				
FB109	B-2		FL502	F-2	S				Q513	E-1				
FB112	F-5		FL503	F-2	S	LF101	A-2		Q514	F-3				
FB121	E-5		FL504	E-3	S	LF102	A-3		Q515	F-2				
FB122	F-4	S	FL505	E-4	S	LF106	A-3		Q516	F-2				
FB123	F-5								Q517	F-2				
FB304	D-1	S	IC101	B-1		Q101	A-2	S	Q518	F-2				
FB305	D-1	S	IC102	B-4	S	Q102	A-3		Q519	F-2				
FB306	D-1	S	IC103	B-4	S	Q103	A-4	S	Q520	F-2				
FB307	D-1	S	IC104	C-2		Q104	B-3	S	Q521	E-4				
FB308	E-1	S	IC106	C-2	S	Q106	B-2		Q522	E-4				
FB309	D-1	S	IC107	A-2	S	Q108	B-4	S	Q523	E-4	S			
FB310	E-1	S	IC108	A-2	S	Q109	B-4		Q525	E-4				
FB311	D-1	S	IC109	A-3		Q110	B-4		Q526	E-4				
FB312	D-1	S	IC110	A-3		Q111	B-4	S	Q527	E-4	S			
FB313	D-1	S	IC111	C-3		Q112	B-4		Q528	F-4				
FB314	D-1	S	IC112	B-3	S	Q113	B-2	S	Q529	E-4				
FB315	D-1	S	IC113	A-5	S	Q116	E-6		Q530	E-4	S			
FB316	F-1	S	IC114	B-6	S	Q117	E-6		Q531	F-4				
FB317	F-1	S	IC119	C-1	S	Q118	E-6		Q532	E-4				
FB318	F-1	S	IC120	F-6		Q119	F-5		Q540	F-4	S			
FB319	F-1	S	IC121	E-6	S	Q120	E-6		Q601	E-3	S			
FB320	F-1	S	IC122	E-6		Q121	E-6		Q602	E-3	S			
FB321	F-1	S	IC123	D-6		Q122	E-5		Q901	D-4				
FB322	F-1	S	IC125	B-3	S	Q123	E-5		Q902	D-4				
FB323	D-1	S	IC126	A-3	S	Q124	E-6		Q910	C-6				
FB324	E-1	S	IC128	D-4	S	Q125	B-4							
FB325	F-1		IC130	D-3	S	Q126	A-4	S	RV301					
FB327	F-1	S	IC301	B-6	S	Q301	C-6		RV302	C-4	S			
FB328	C-1	S	IC302	B-6		Q302	B-6		RV303	C-4	S			
FB329	B-1	S	IC303	A-6	S	Q303	A-6		RV304	C-5	S			
FB330	B-1	S	IC304	B-5	S	Q304	A-6							
FB331	C-1		IC306	C-4	S	Q305	A-5		X101	D-3	S			
FB332	B-1	S	IC307	C-5	S	Q306	B-5	S	X301					
FB334	B-1		IC308	C-4	S	Q307	B-5							
FB335	A-1		IC309	C-2		Q308	B-6	S						

S:SOLDERING SIDE

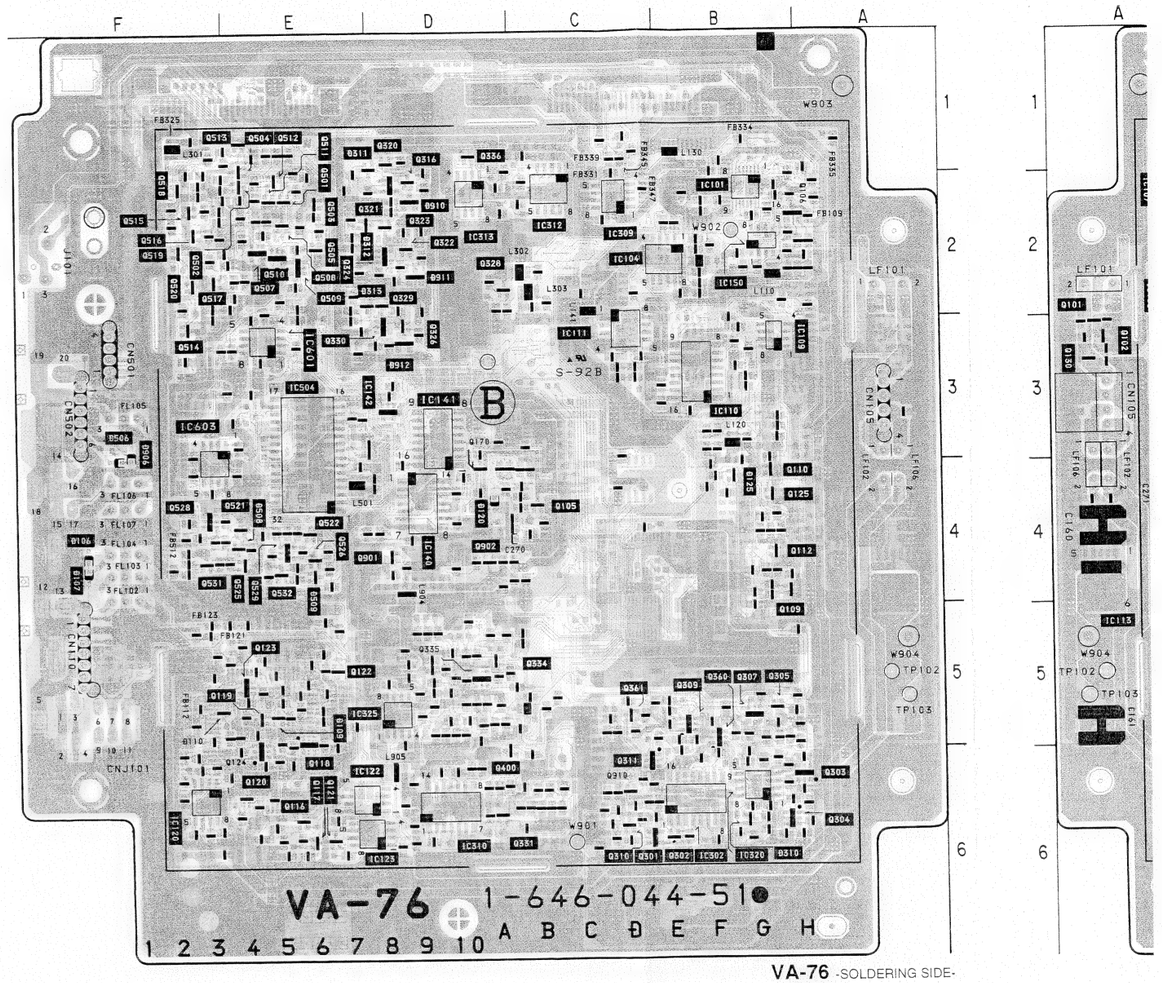
UP-1200AEPM

VA-76(B) (ANALOG VIDEO)

VA-76(B) BOARD

CN101	E-1	S	FB337	C-1	S	IC320	B-5		Q309	B-5	
CN102	C-1	S	FB338	C-1	S	IC501	E-2	S	Q310	C-6	
CN105	A-3	S	FB339	C-1		IC504	E-3		Q311	B-5	
CN110	F-5	S	FB340	C-1	S	IC506	E-3	S	Q312	D-5	S
CN502	F-3	S	FB343	C-2	S	IC507	D-3	S	Q316	D-1	
			FB344	C-2	S	IC508	D-3	S	Q320	D-1	
CT101	A-2	S	FB345	C-1		IC511	E-1	S	Q321	D-2	
CT102	D-2	S	FB346	C-2	S	IC601	E-2		Q322	D-2	
			FB347	B-2		IC602	E-4	S	Q323	D-2	
D101	A-2	S	FB348	C-2	S	IC603	E-3		Q324	D-2	
D109	E-5		FB349	C-2	S				Q326	D-3	
D110	E-5		FB510	E-4	S	J101	F-2	S	Q328	C-2	
D125	B-3		FB511	E-4	S				Q329	D-2	
D126	B-2	S	FB512	E-4		L101	D-4	S	Q330	D-2	
D301	B-5	S	FB901	D-3	S	L102	D-4	S	Q331	C-6	
D302	A-5	S	FB920	D-1	S	L103	C-3	S	Q334	C-5	
D310	B-6		FB921	D-2	S	L110	B-2		Q335	D-5	
D311	D-1		FB922	E-2	S	L120	B-3		Q336	D-1	
D312	D-2					L130	B-1		Q350	C-2	S
D313	D-2		FL102	F-4	S	L140	B-3	S	Q360	B-5	
D503	E-4	S	FL103	F-4	S	L141	C-2		Q361	C-5	
D508	E-4		FL104	F-4	S	L301	E-1		Q501	E-2	
D509	E-4		FL105	F-3	S	L302	C-2		Q502	E-1	
D910	D-2		FL106	F-3	S	L303	C-2		Q503	F-2	
D911	D-2		FL107	F-4	S	L350	D-1	S	Q504	E-1	
D912	D-3		FL201	E-4	S	L501	D-3		Q505	E-2	
			FL202	E-6	S	L901	D-1	S	Q506	E-2	S
DL301	C-6	S	FL203	E-6	S	L902	D-2	S	Q507	E-2	
DL302	C-5	S	FL301	C-6	S	L903	D-2	S	Q508	E-2	
DL303	C-5	S	FL304	D-4	S	L904	D-4		Q509	E-2	
			FL501	E-2	S	L905	D-5		Q510	E-2	
FB107	B-2		FL502	E-2	S				Q511	E-2	
FB108	B-2	S	FL503	E-2	S	LF101	A-2		Q512	E-1	
FB109	B-2		FL504	E-3	S	LF102	A-3		Q513	E-1	
FB112	E-5		FL505	E-3	S	LF106	A-3		Q514	E-2	
FB121	E-4								Q515	E-2	
FB122	E-4	S	IC102	B-4	S	Q101	A-2	S	Q516	E-2	
FB123	E-5		IC103	B-3	S	Q102	A-2	S	Q517	E-2	
FB304	D-1	S	IC104	B-2		Q103	A-4	S	Q518	E-2	
FB305	D-1	S	IC106	C-2	S	Q104	B-3	S	Q519	E-2	
FB306	D-1	S	IC107	A-2	S	Q105	C-4		Q520	E-2	
FB307	D-1	S	IC108	A-2	S	Q106	A-2		Q521	E-4	
FB308	D-1	S	IC109	B-2		Q108	B-4	S	Q522	E-4	
FB309	D-1	S	IC110	B-3		Q109	B-4		Q523	E-4	S
FB310	D-1	S	IC111	C-2		Q110	B-3		Q525	E-4	
FB311	D-1	S	IC112	B-3	S	Q111	A-3	S	Q526	E-4	
FB312	D-1	S	IC113	A-4	S	Q112	B-4		Q527	E-4	S
FB313	D-1	S	IC114	B-6	S	Q113	B-2	S	Q528	E-4	
FB314	D-1	S	IC119	B-2	S	Q116	E-6		Q529	E-4	
FB315	D-1	S	IC121	E-5	S	Q117	E-6		Q530	E-4	S
FB316	F-1	S	IC122	D-5		Q118	E-5		Q531	E-4	
FB317	F-1	S	IC123	D-6		Q119	E-5		Q532	E-4	
FB318	F-1	S	IC125	B-3	S	Q120	D-6		Q540	E-4	S
FB319	F-1	S	IC126	A-3	S	Q121	D-6		Q601	E-3	S
FB320	F-1	S	IC128	D-3	S	Q122	E-5		Q602	E-3	S
FB321	F-1	S	IC130	C-3	S	Q123	E-5		Q901	D-4	
FB322	F-1	S	IC301	B-5	S	Q124	E-5		Q902	C-4	
FB323	D-1	S	IC302	B-5		Q125	B-3		Q910	C-5	
FB324	D-1	S	IC303	B-5	S	Q126	A-4	S			
FB325	E-1		IC304	B-5	S	Q170	C-3		RV301	D-5	S
FB327	C-1	S	IC306	C-4	S	Q171	C-3	S	RV302	C-4	S
FB328	C-1	S	IC307	B-4	S	Q301	B-6		RV303	C-4	S
FB329	B-1	S	IC308	B-4	S	Q302	B-6		RV304	C-4	S
FB330	B-1	S	IC309	C-2		Q303	A-5				
FB331	C-1		IC310	D-6		Q304	A-6		X101	C-4	S
FB332	B-1	S	IC311	D-5	S	Q305	B-5		X102	D-3	S
FB334	B-1		IC312	C-2		Q306	B-5	S	X301	D-5	S
FB335	A-1		IC313	D-2		Q307	B-5				
FB336	C-2	S	IC314	C-1	S	Q308	B-5	S			

S:SOLDERING SIDE



VA-76 -SOLDERING SIDE-
1-646-044-51

309	B-5	
310	C-6	
311	B-5	
312	D-5	S
316	D-1	
320	D-1	
321	D-2	
322	D-2	
323	D-2	
324	D-2	
326	D-3	
328	C-2	
329	D-2	
330	D-2	
331	C-6	
334	C-5	
335	D-5	
336	D-1	
350	C-2	S
360	B-5	
361	C-5	
501	E-2	
502	E-1	
503	F-2	
504	E-1	
505	E-2	
506	E-2	S
507	E-2	
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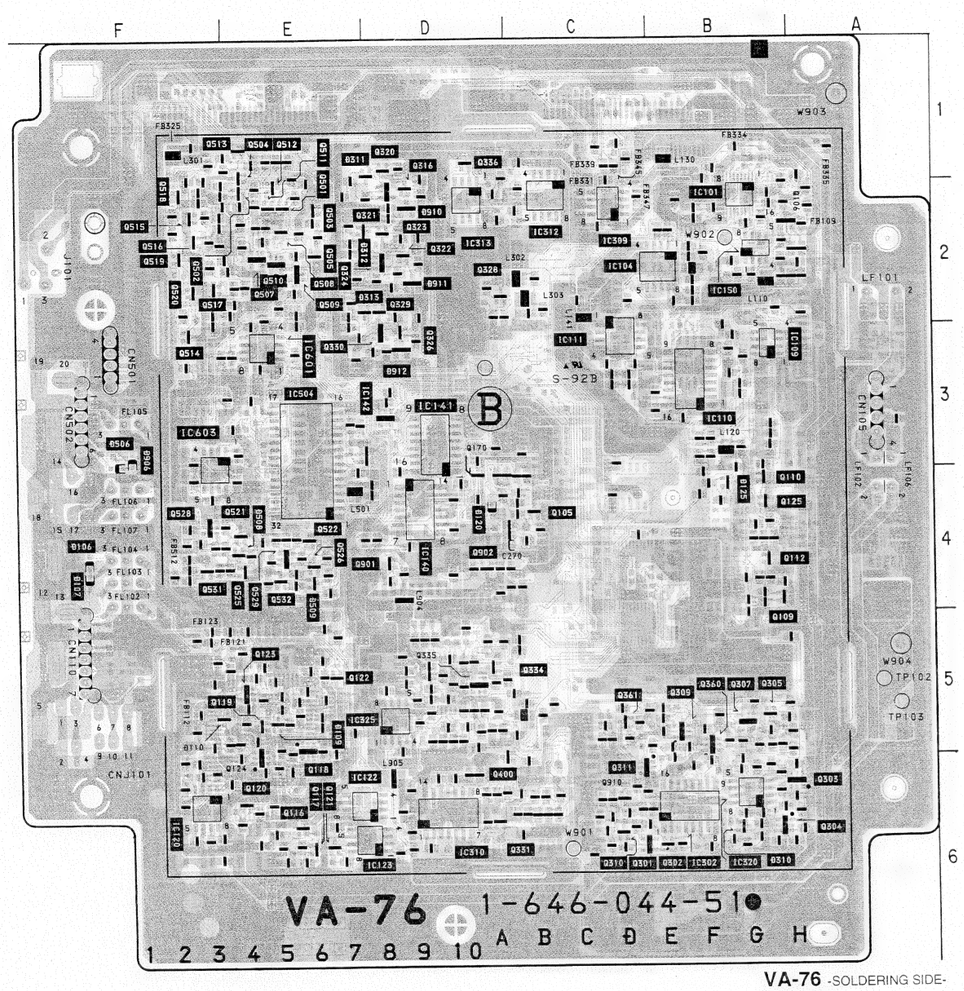
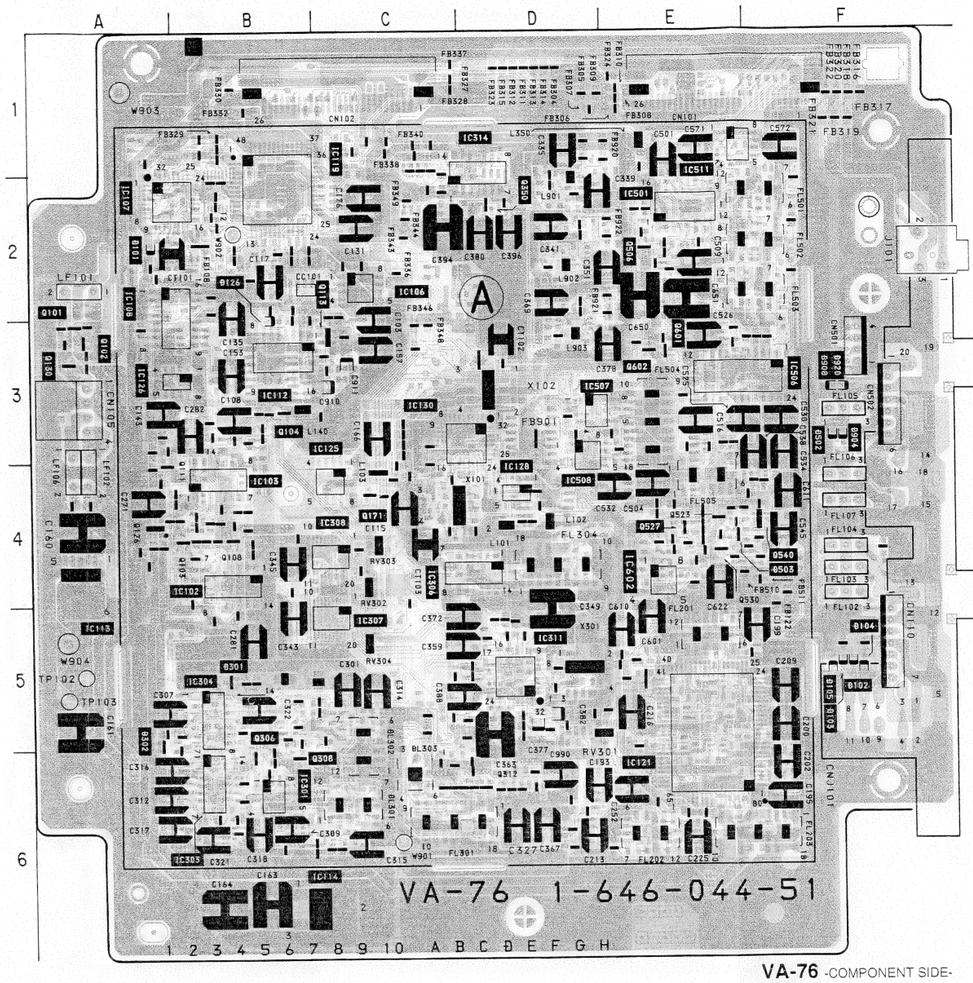
517	E-2	
518	E-2	
519	E-2	
520	E-2	
521	E-4	
522	E-4	
523	E-4	S
525	E-4	
526	E-4	
527	E-4	S
528	E-4	
529	E-4	
530	E-4	S
531	E-4	
532	E-4	
540	E-4	S
601	E-3	S
602	E-3	S
901	D-4	
902	C-4	
910	C-5	
V301	D-5	S
V302	C-4	S
V303	C-4	S
V304	C-4	S
101	C-4	S
102	D-3	S
301	D-5	S



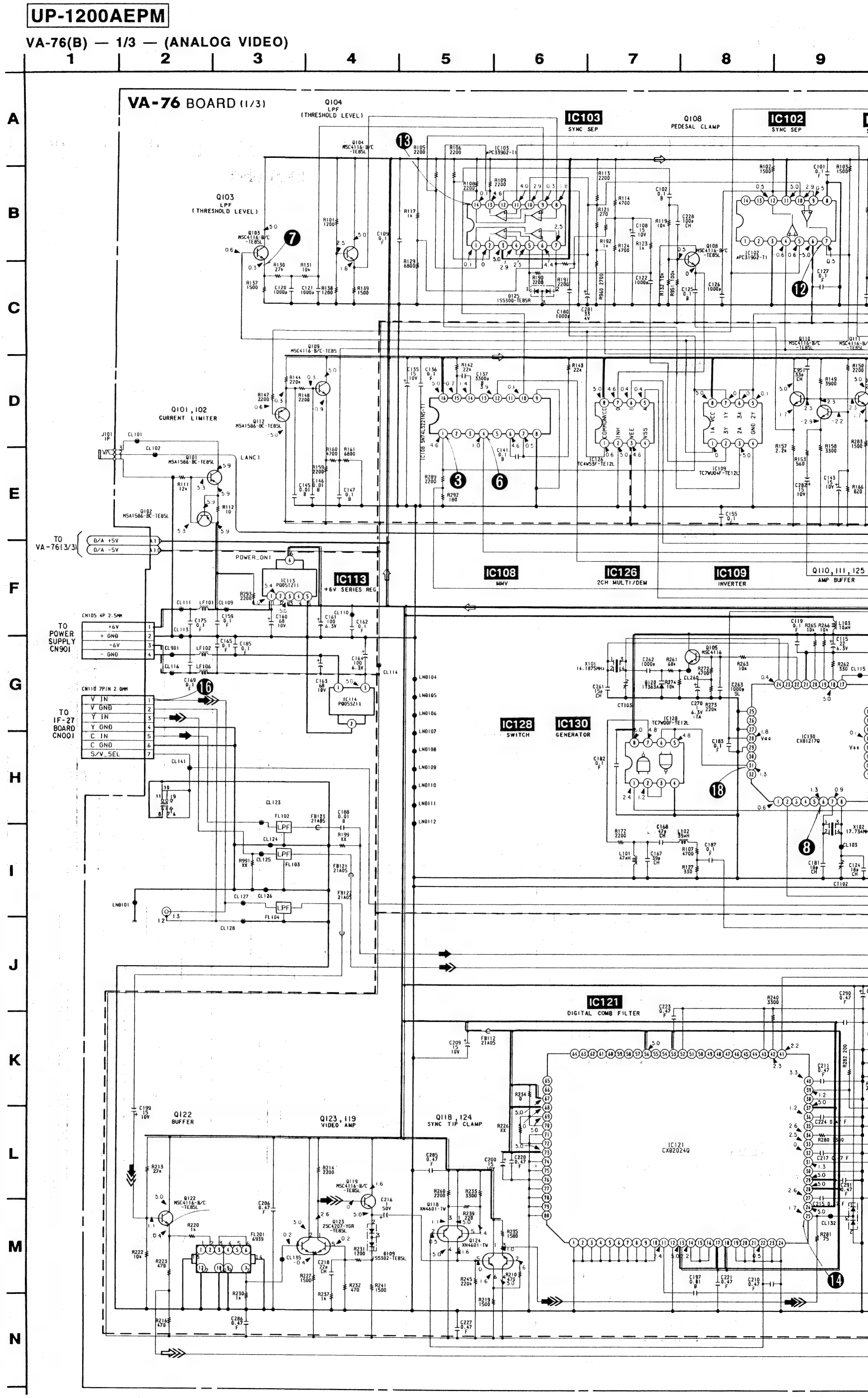
VA-76 -SOLDERING SIDE-
1-646-044-51



VA-76 -COMPONENT SIDE-
1-646-044-51

UP-1200AEPM

VA-76(B) — 1/3 — (ANALOG VIDEO)



• **SIGNAL PATH**

	VIDEO	
	CHROMA	Y
REC	➡	➡
PB	⇨	⇨

6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17

IC103 SYNC SEP

Q108 PEDESAL CLAMP

IC102 SYNC SEP

IC106 SYNC DEP

IC104 LOOP FILTER

IC107 SYNC SIGNAL GENERATOR

IC111 BUFFER

IC112 SWITCH SAMPLING GATE

IC110 MMVIDELAY1 SAMPLING PULSE GEN

IC119 PULSE GENERATOR

IC126 2CH MULTI/DEM

IC109 INVERTER

Q110, 111, 125 AMP BUFFER

IC130 GENERATOR

IC121 DIGITAL COMB FILTER

Q117 C BUFFER

Q120, 116 Y BUFFER

Q121 C BUFFER

IC125, **IC122** Y OUT SELECTOR

IC123 C OUT SELECTOR

• **SIGNAL PATH**

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡	➡
PB	⇨	⇨	⇨

10 11 12 13 14 15 16 17 18 19 20

IC104 LOOP FILTER

IC107 SYNC SIGNAL GENERATOR

IC101

IC111 BUFFER

IC112 SWITCH SAMPLING GATE

IC110 MMV(DELAY) SAMPLING PULSE GEN

IC150

IC119 PULSE GENERATOR

IC125 , IC122 Y OUT SELECTOR

IC123 C OUT SELECTOR

Q117 BUFFER

Q120 , 116 Y BUFFER

Q121 C BUFFER

TO VA-76 (2/3)

TO VA-76 (2/3)

TO VA-76(3/3)

• SIGNAL PATH

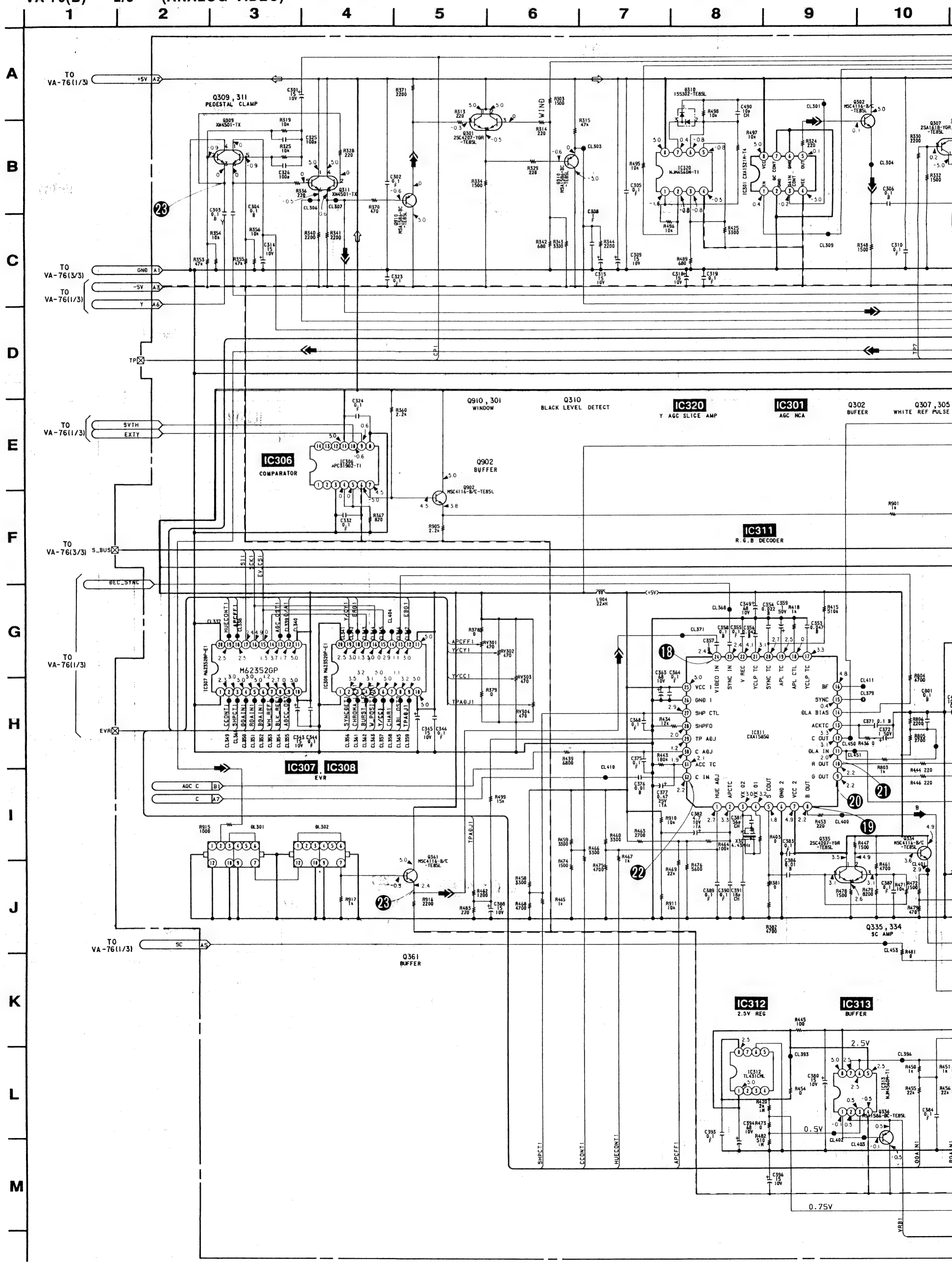
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡	
PB			

• SIGNAL PATH

VIDEO SIGNAL	
ANALOG R	
ANALOG G	
ANALOG B	

UP-1200AEPM

VA-76(B) — 2/3 — (ANALOG VIDEO)



• **SIGNAL PATH**

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡	➡	
PB			

• **SIGNAL PATH**

VIDEO SIGNAL	REC	PB
ANALOG R	➡ R	⇨ R
ANALOG G	➡ G	⇨ G
ANALOG B	➡ B	⇨ B

7 8 9 10 11 12 13 14 15 16 17 18

IC303 , IC304
AGC AMP

IC302
CLAMP

IC320
Y AGC SLICE AMP

IC301
AGC NCA

Q302
BUFFER

Q307 , 305
WHITE REF PULSE GENERATOR

Q310
LEVEL DETECT

IC310
1H DELAY

Q331
BUFFER

Q312
BUFFER

Q400
AMP

IC311
R.G.B DECODER

IC309
EEP ROM

Q316 , 320
R +6dB AMP

Q322 , 323 , 324
R +6dB AMP

Q308 , 306
BUFFER

Q360
BLK LEVEL

Q303
BUFFER

Q304
WHITE REF LEVEL DET

Q335 , 334
SC AMP

Q328
BUFFER

IC312
2.5V REG

IC313
BUFFER

IC314
BUFFER

Q326 , 329 , 330
B +6dB AMP

VA-76

ANALOG VIDEO	ANALOG VIDEO
VA-76(B)	VA-76(B)

	PB
	⇨R
	⇨G
	⇨B

11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20

IC303 , IC304
AGC AMP

IC302
CLAMP

IC310
1H DELAY

IC309
EEP ROM

IC314
BUFFER

Q308 , 306 BUFFER
Q360 BLK LEVEL
Q303 BUFFER
Q304 WHITE REF LEVEL DET
Q331 BUFFER
Q312 BUFFER
Q400 AMP
Q328 BUFFER
Q316 , 320 R +6dB AMP
Q322 , 323 , 324 R +6dB AMP
Q326 , 329 , 330 B +6dB AMP

WHITE_REF
BLKG
BLKG
CLAMP_P
AGC_OFFSET
AGCC_OFFSET
BLK_REF1
ABL_OST1
ABL_OST2
AGCC_OST1
CPREF1
VRTR1
VRTG1
VRTB1
VRB1
L350 4.7uH
L301 4.7uH
W_NO
TP
CP

B1 AGC C
B/A
B2 ENC SC
EVR
TO VA-76 (3/3)
TO FMY-13 BOARD CN001
TO FMY-13 BOARD CN002

CN101 26P

26	R OUT
25	A GND
24	G OUT
23	A GND
22	B OUT
21	A GND
20	VRT R
19	VRT G
18	VRT B
17	VRB
16	A GND
15	CP
14	A -5V
13	A GND
12	R IN
11	A GND
10	G IN
9	A GND
8	B IN
7	A GND
6	V REF
5	A GND
4	A GND
3	A +5V
2	A +5V
1	A +5V

CN102 26P

26	EE_RESET
25	GND
24	RESET
23	SYNC SEL
22	POWER ON
21	SYNC DET
20	LANC
19	DATA IN
18	DATA OUT
17	SCK
16	CS3
15	CS4
14	CS5
13	CS6
12	BUSY 1
11	BUSY 3
10	S/V SEL
9	
8	V0
7	
6	H0
5	B GND
4	B GND
3	910fH
2	B GND
1	B GND

VA-76 BOARD (2/3)

ANALOG VIDEO **VA-76(B)**
ANALOG VIDEO **VA-76(B)**

UP-1200AEPM

VA-76(B) — 3/3 — (ANALOG VIDEO)

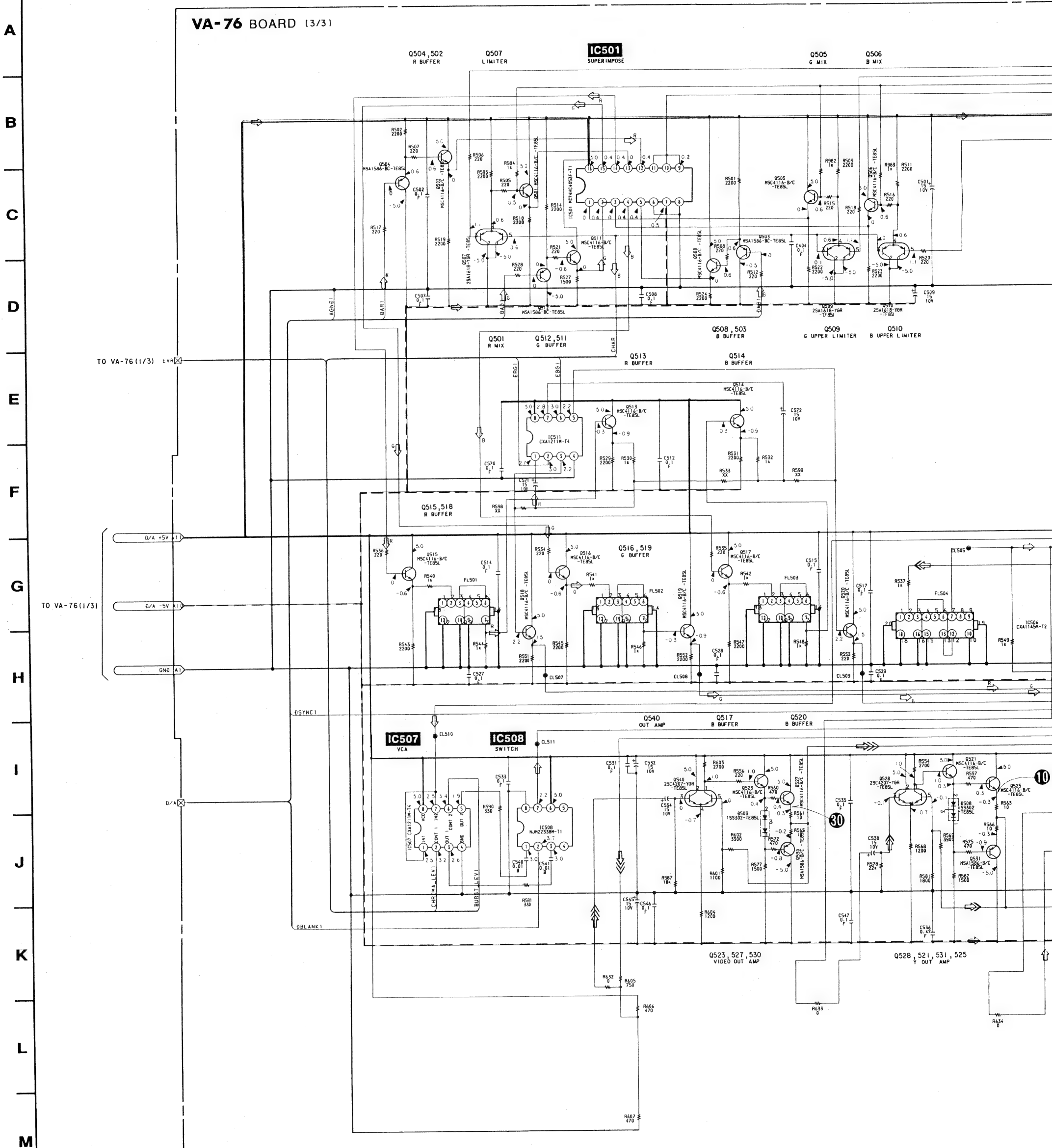
• **SIGNAL PATH**

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			
PB	⇨	⇨	⇨

• **SIGNAL PATH**

VIDEO SIGNAL	REC	PB
ANALOG R		⇨
ANALOG G		⇨
ANALOG B		⇨

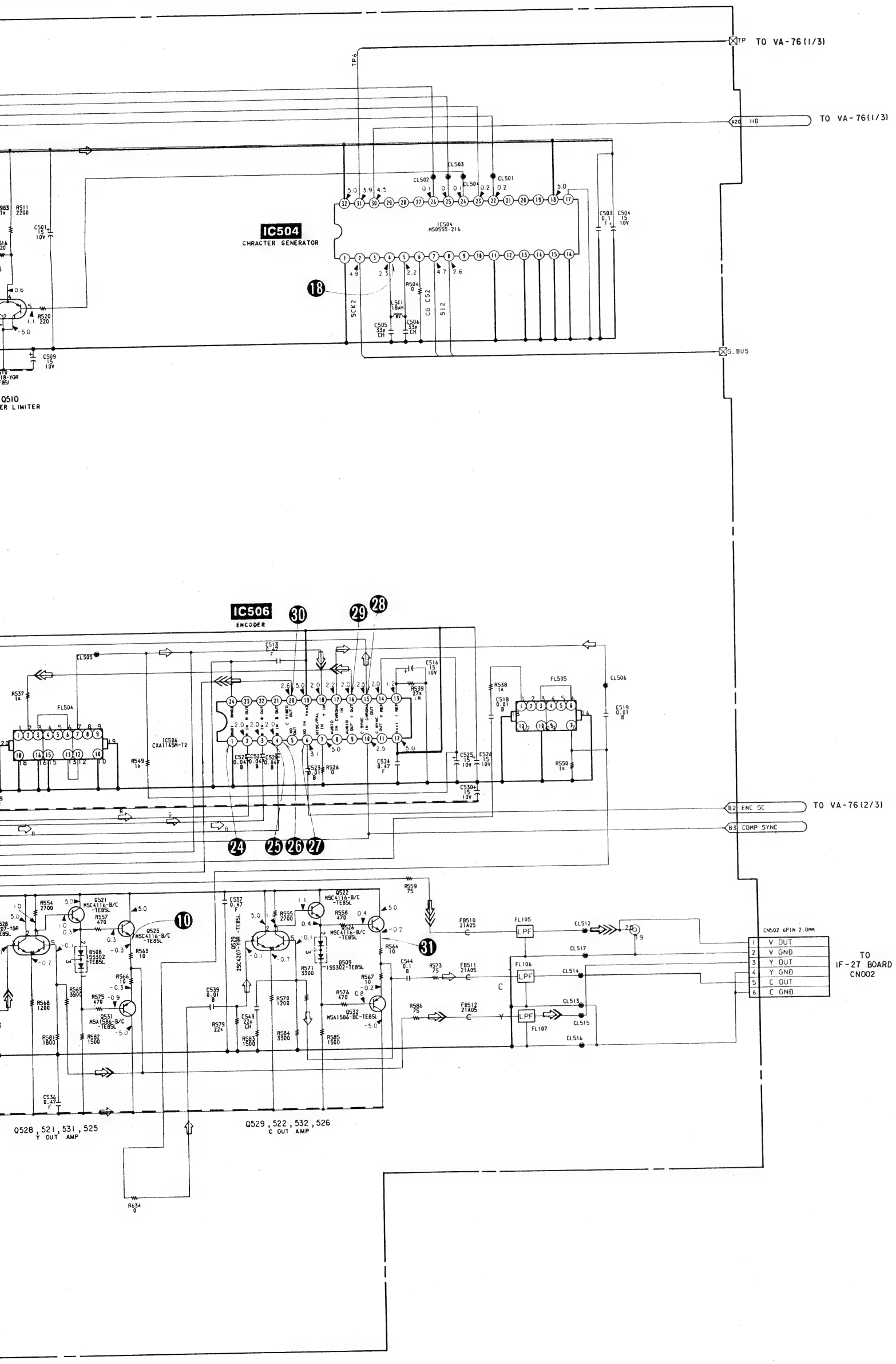
VA-76 BOARD (3/3)



SIGNAL PATH

DEO SIGNAL	REC	PB
ANALOG R		⇨ R
ANALOG G		⇨ G
ANALOG B		⇨ B

10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19



7 | 18 | 19

VA-76(1/3)

TO VA-76(1/3)

TO VA-76(2/3)

02 6PIN 2.0MM

OUT
GND
OUT
GND
OUT
GND

TO
IF-27 BOARD
CN002

FMY-13 BOARD (1/3)

TO FMY-13 (2/3)

TO VA-76 BOARD CN101

TO FMY-13 (3/3)

Q101, 102 R PEDESTAL CLAMP

Q201, 202 G PEDESTAL CLAMP

Q301,302 B PEDESTAL CLAMP

IC101 R A/D CONVERTER

IC201 G A/D CONVERTER

IC301 B A/D CONVERTER

IC512 SW

IC514 SW

IC515 INV

IC513 SW

IC516 INV

TO FMY-13 (2/3)

IC401 DICC

IC402 D/A CONVERTER

IC403 MAIN MASKING ROM

IC404 SUB MASKING ROM

IC405 LATCH

IC513 INV.

IC515 INV.

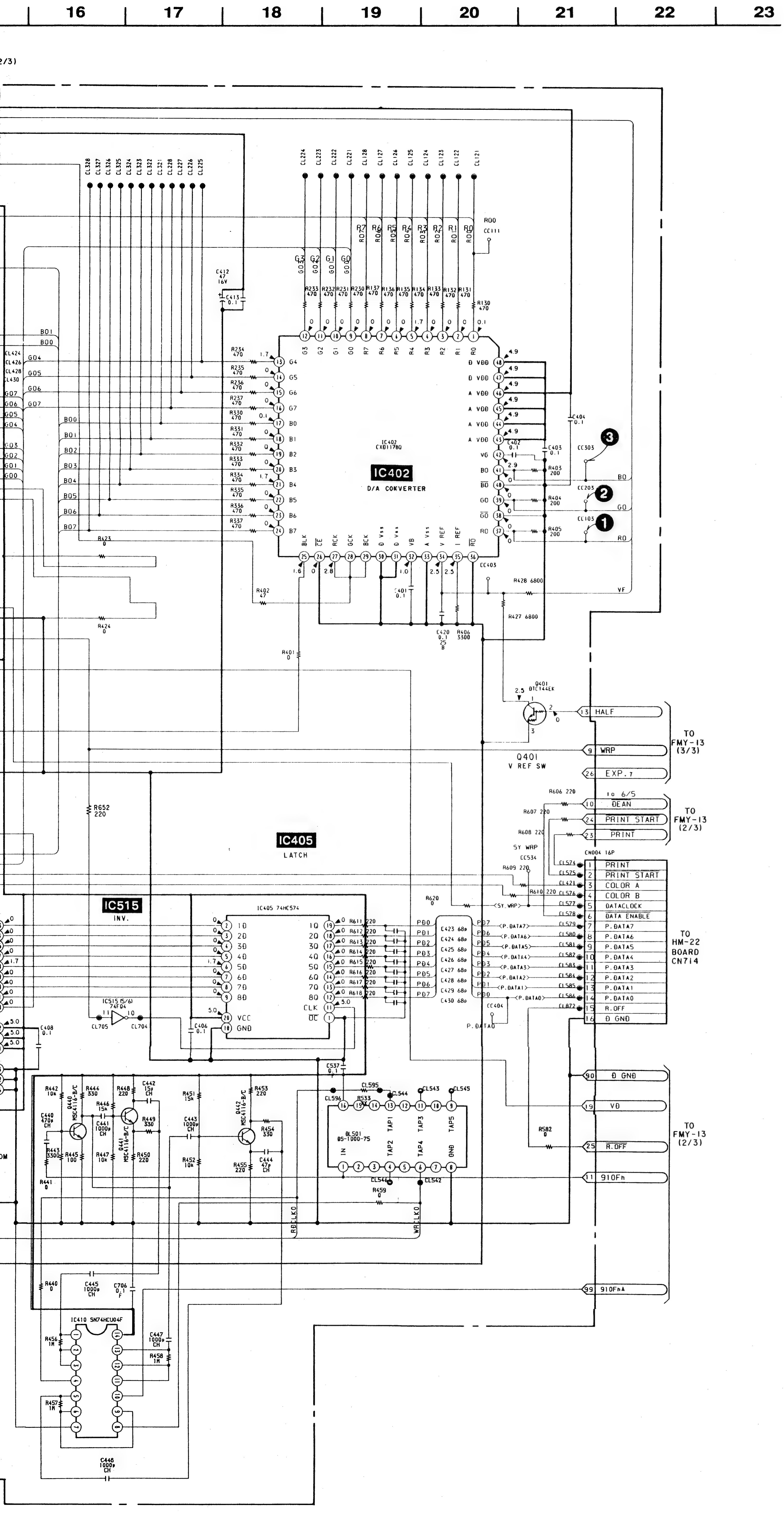
Q401 V REF SW

CN008 6P

6	UN SWΘ +5V
5	SWΘ +5V
4	SWΘ +5V
3	GNΘ
2	GNΘ
1	POWER ON

CN004 16P

1	PRINT
2	PRINT STA
3	COLOR A
4	COLOR B
5	DATACLOCK
6	DATA ENABLE
7	P. DATA7
8	P. DATA6
9	P. DATA5
10	P. DATA4
11	P. DATA3
12	P. DATA2
13	P. DATA1
14	P. DATA0
15	R. OFF
16	Θ GNΘ


16
17
18
19
20
21
22
23
IC402
D/A CONVERTER
IC402 CXD1178Q
IC405
LATCH
IC405 74HC574
IC515
INV.
IC515 (5/6) 74F04
IC410 SN74HCU04F
DL501 DS-1000-75
Q401 DTC144EK
Q401
V REF SW
Q440 MSC4116-B/C
Q441 MSC4116-B/C
Q442 MSC4116-B/C
HALF
WRP
EXP.7
TO FMY-13 (3/3)
DEAN
PRINT START
PRINT
TO FMY-13 (2/3)
CN004 16P
PRINT
PRINT START
COLOR A
COLOR B
DATACLOCK
DATA ENABLE
P.DATA7
P.DATA6
P.DATA5
P.DATA4
P.DATA3
P.DATA2
P.DATA1
P.DATA0
R.OFF
D GND
TO HM-22 BOARD CN714
D GND
VD
R.OFF
910Fh
910FhA
TO FMY-13 (2/3)
RDCLKO
WRCLKO

FMY-13 BOARD (2/3)

TO FMY-13 (1/3)

TO FMY-13 (1/3) — D+5V

IC501 D RAM (R10-R13)

IC502 D RAM (R14-R17)

IC503 D RAM (G10-G13)

IC504 D RAM (G14-G17)

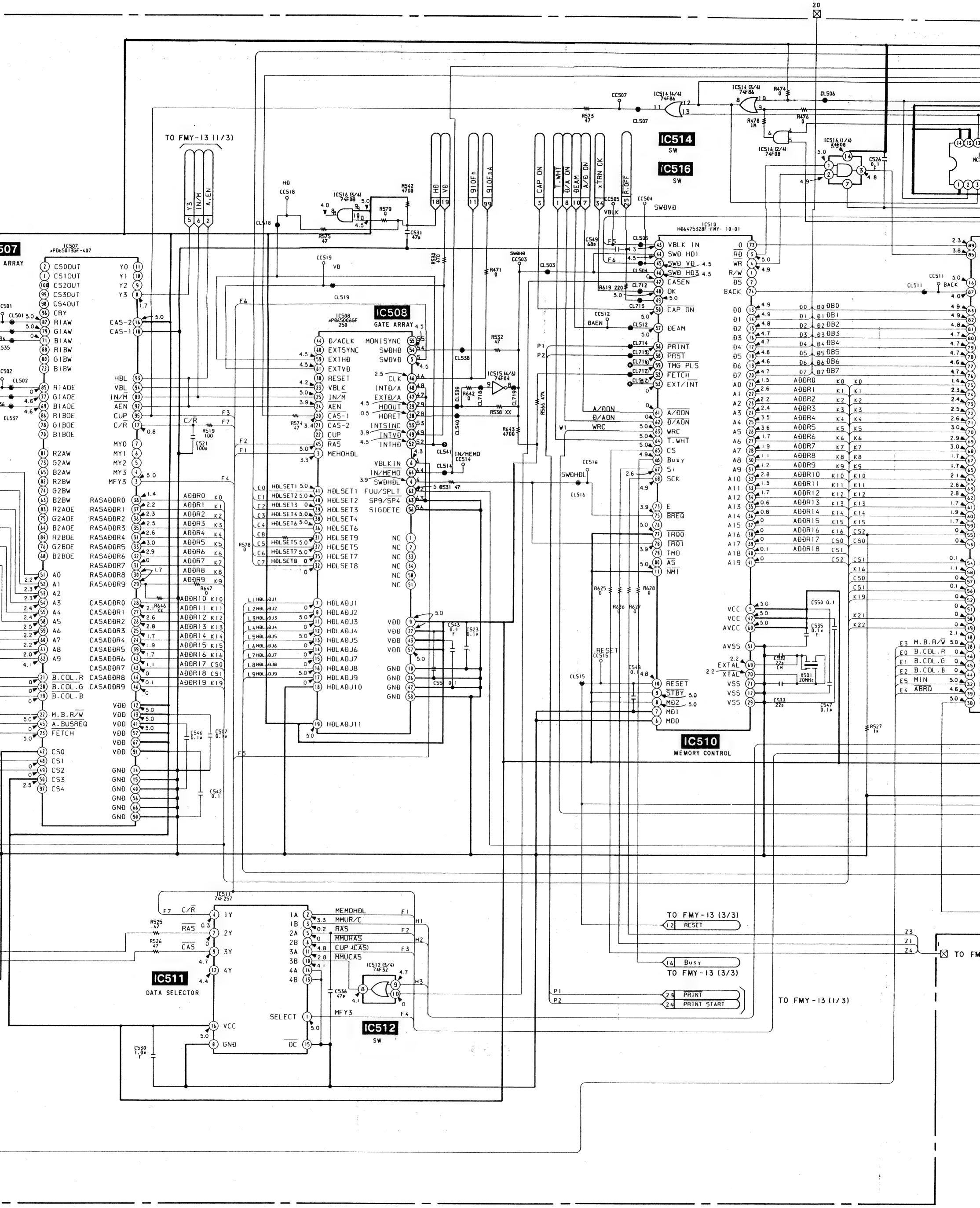
IC505 D RAM (B10-B13)

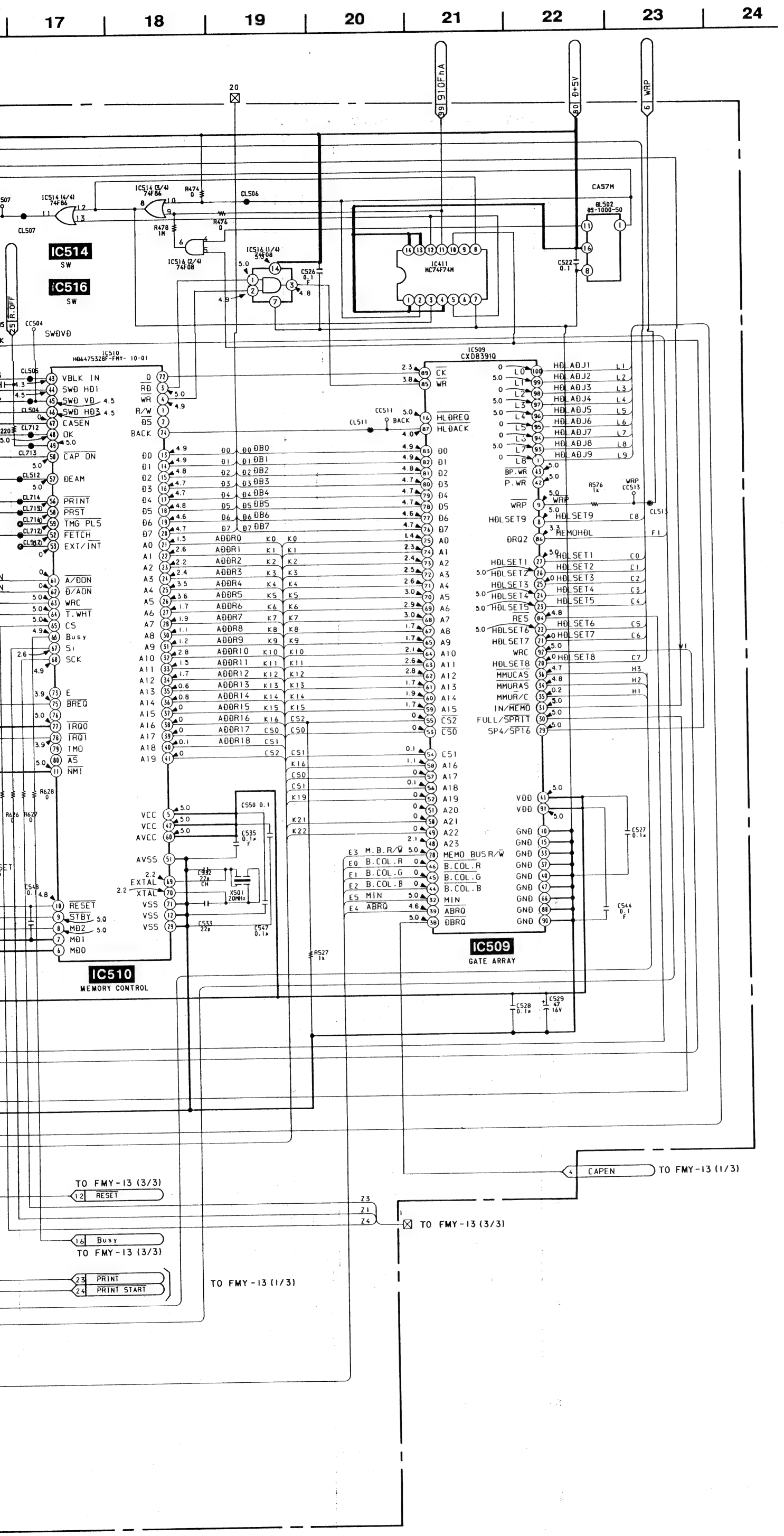
IC506 D RAM (B14-B17)

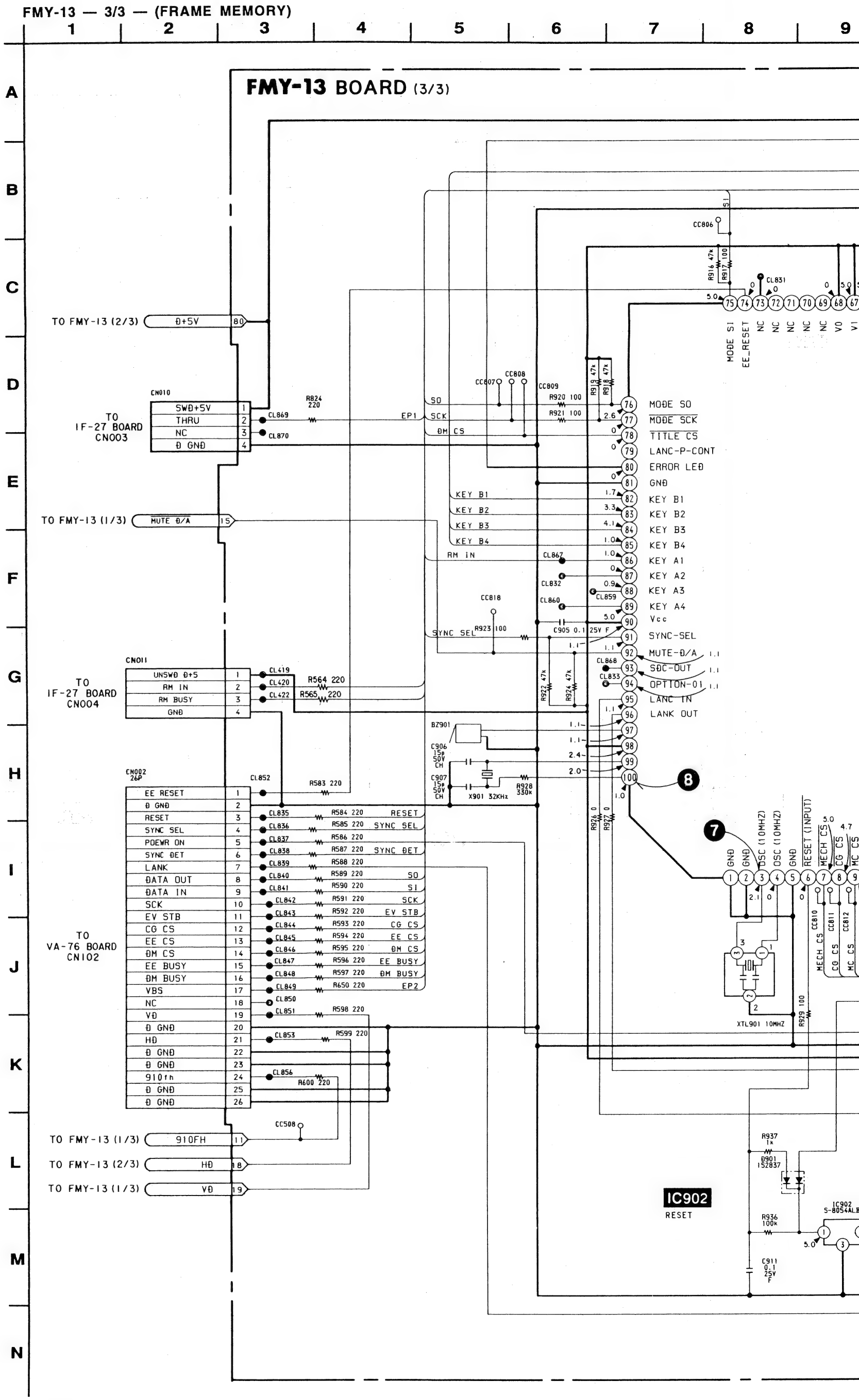
IC507 GATE ARRAY

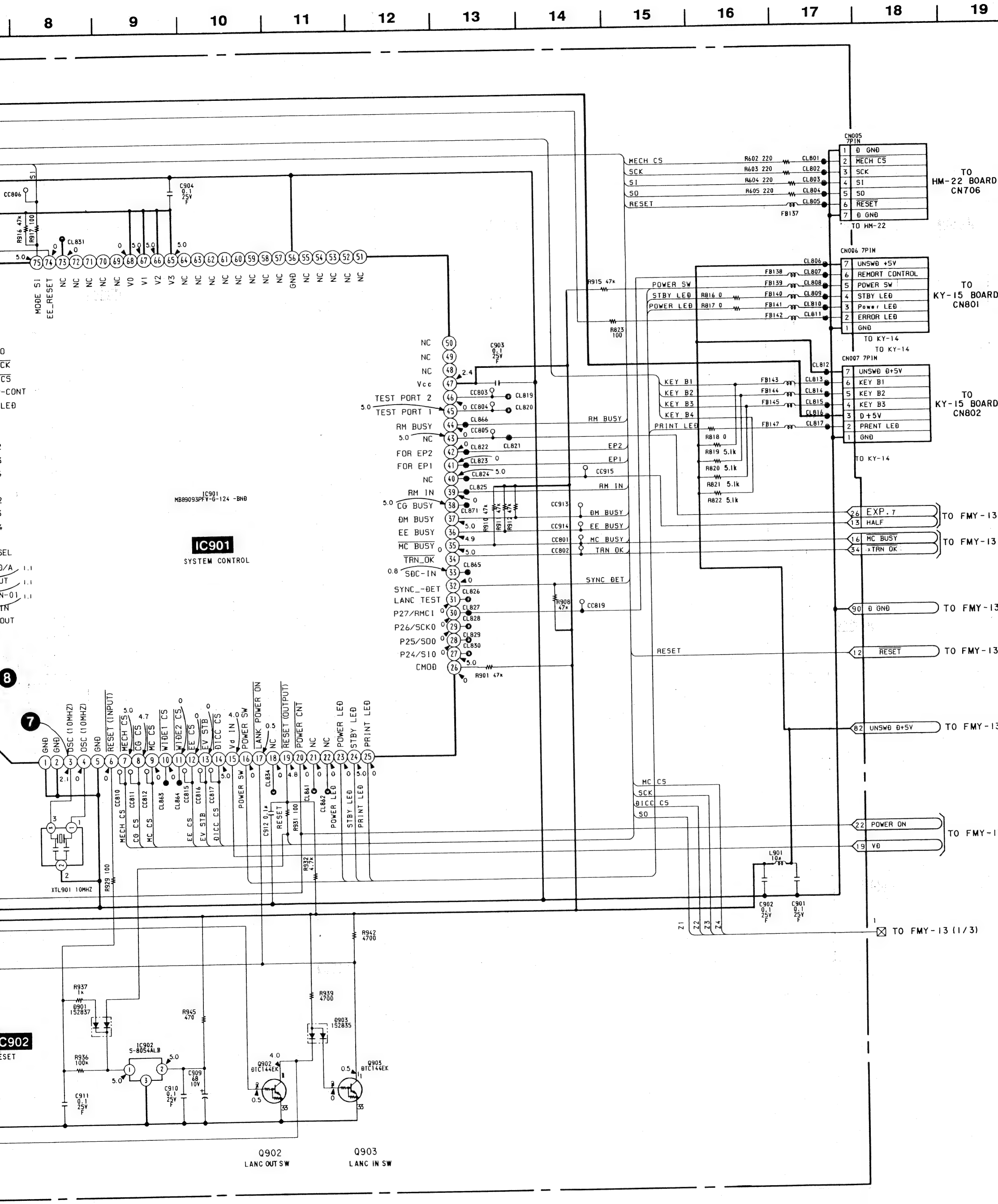
TO FMY-13 (3/3) — DGND

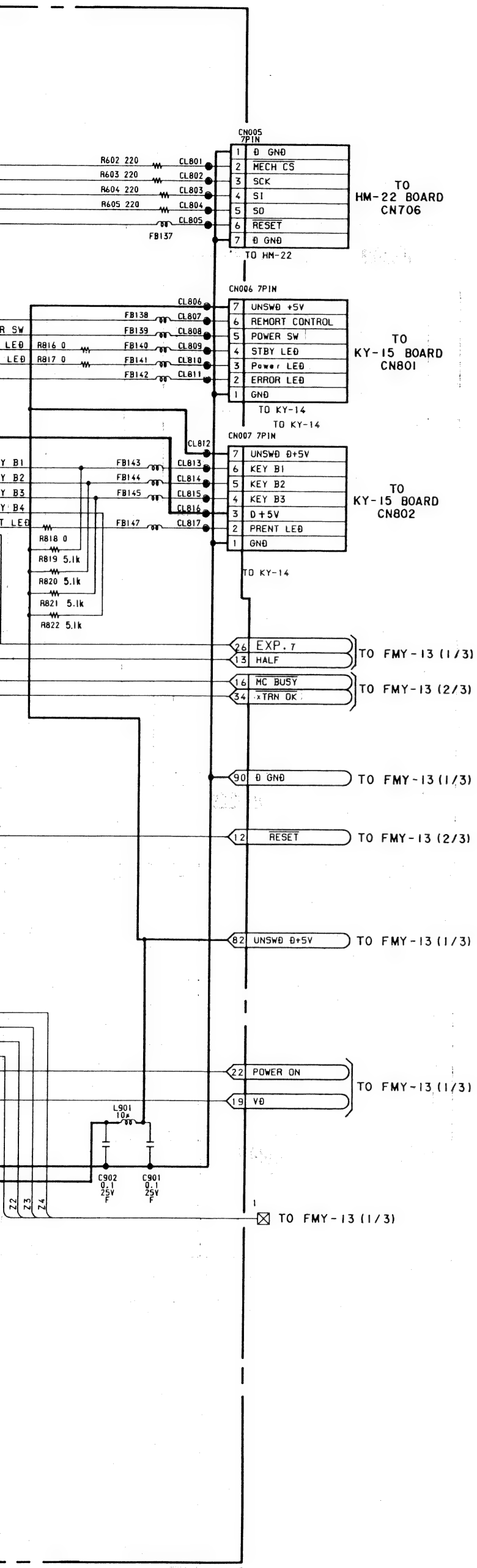
IC51 DATA SEL

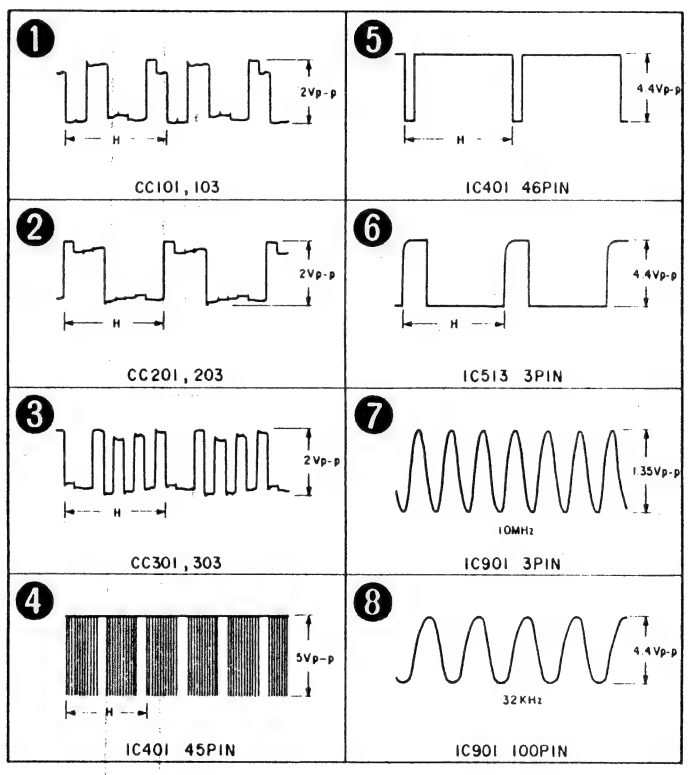

IC514
SW
IC516
SW
IC510
MEMORY CONTROL
IC508
GATE ARRAY
IC511
DATA SELECTOR
IC512
SW
TO FMY-13 (1/3)
TO FMY-13 (3/3)
TO FMY-13 (3/3)
TO FMY-13 (1/3)
TO FM


17
18
19
20
21
22
23
24
910FnA
+5V
WRP
IC514
SW
IC516
SW
IC510
MB6475328F-FMY-10-01
MEMORY CONTROL
IC509
CXD8391Q
GATE ARRAY
IC411
MC74F74M
CAS7M
BL502
89-1000-50
X501
20MHz
VBLK IN
SWØ HØ1
SWØ VØ
SWØ HØ3
CASEN
ØK
CAP ON
ØEAM
PRINT
PRST
TMG PLS
FETCH
EXT/INT
A/ØON
Ø/AON
WRC
T.WHT
CS
Busy
SI
SCK
E
BREQ
IRQØ
IRQ1
TMØ
AS
NMI
RESET
STBY
MØ2
MØ1
MØØ
HLØREQ
HLØACK
HLADJ1
HLADJ2
HLADJ3
HLADJ4
HLADJ5
HLADJ6
HLADJ7
HLADJ8
HLADJ9
BP.WR
P.WR
WRP
HLSET9
ØRQ2
MEMOHØL
HLSET1
HLSET2
HLSET3
HLSET4
HLSET5
RES
HLSET6
HLSET7
HLSET8
MMUCAS
MMURAS
MMUR/C
IN/MEMØ
FULL/SPRIT
SP4/SPT6
MEMO BUS R/W
B.COL.R
B.COL.G
B.COL.B
MIN
ABRQ
ØBRQ
TO FMY-13 (3/3)
TO FMY-13 (1/3)
CAPEN
RESET
Busy
PRINT
PRINT START

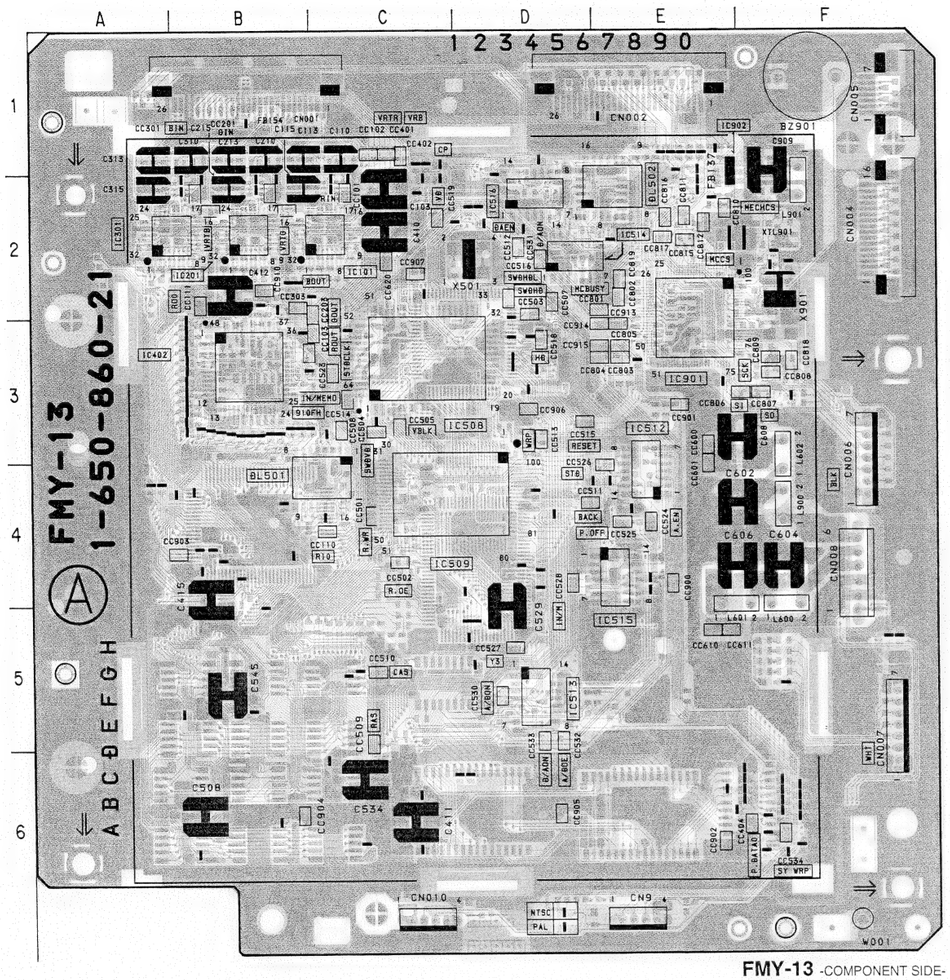

FMY-13 BOARD (3/3)
TO FMY-13 (2/3) Ð+5V 80
TO FMY-13 (1/3) MUTE Ð/A 15
TO FMY-13 (1/3) 910FH 11
TO FMY-13 (2/3) HÐ 18
TO FMY-13 (1/3) VÐ 19
TO IF-27 BOARD CN003
CN010
SWÐ+5V 1
THRU 2
NC 3
Ð GNÐ 4
CL869
CL870
R824 220
TO IF-27 BOARD CN004
CN011
UNSWÐ Ð+5 1
RM IN 2
RM BUSY 3
GNÐ 4
CL419
CL420
CL422
R564 220
R565 220
TO VA-76 BOARD CN102
CN002 26P
EE RESET 1
Ð GNÐ 2
RESET 3
SYNC SEL 4
POEWR ON 5
SYNC ÐET 6
LANK 7
ÐATA OUT 8
ÐATA IN 9
SCK 10
EV STB 11
CG CS 12
EE CS 13
ÐM CS 14
EE BUSY 15
ÐM BUSY 16
VBS 17
NC 18
VÐ 19
Ð GNÐ 20
HÐ 21
Ð GNÐ 22
Ð GNÐ 23
910fh 24
Ð GNÐ 25
Ð GNÐ 26
CL852
R583 220
CL835 R584 220 RESET
CL836 R585 220 SYNC SEL
CL837 R586 220
CL838 R587 220 SYNC ÐET
CL839 R588 220
CL840 R589 220 SO
CL841 R590 220 SI
CL842 R591 220 SCK
CL843 R592 220 EV STB
CL844 R593 220 CG CS
CL845 R594 220 EE CS
CL846 R595 220 ÐM CS
CL847 R596 220 EE BUSY
CL848 R597 220 ÐM BUSY
CL849 R650 220 EP2
CL850
CL851 R598 220
CL853 R599 220
CL856 R600 220
CC508
SO
SCK
ÐM CS
EP1
KEY B1
KEY B2
KEY B3
KEY B4
RM IN
SYNC SEL
R923 100
CC818
CC807
CC808
CC809
R920 100
R921 100
R918 47k
R919 47k
CC806
S1
R916 47k
R917 100
CL831
CL867
CL832
CL859
CL860
C905 0.1 25V F
CL868
CL833
R922 47k
R924 47k
BZ901
C906 15p 50V CH
C907 15p 50V CH
X901 32KHz
R928 330k
R926 0
R927 0
R929 100
XTL901 10MHZ
MODE SO
MODE SCK
TITLE CS
LANC-P-CONT
ERROR LEÐ
GNÐ
KEY B1
KEY B2
KEY B3
KEY B4
KEY A1
KEY A2
KEY A3
KEY A4
Vcc
SYNC-SEL
MUTE-Ð/A
SÐC-OUT
OPTION-01
LANC IN
LANK OUT
MODE S1
EE_RESET
NC
VO
V1
GNÐ
OSC (10MHZ)
RESET (INPUT)
MECH CS
CG CS
MC CS
CC810
CC811
CC812
R937 1k
Ð901 152837
IC902 RESET
IC902 S-8054ALB
R936 100k
C911 0.1 25V F


8
9
10
11
12
13
14
15
16
17
18
19
IC901
MB89093PFV-G-124 -BNØ
IC901
SYSTEM CONTROL
MODE S1
EE_RESET
NC
Vcc
TEST PORT 2
TEST PORT 1
RM BUSY
FOR EP2
FOR EP1
RM IN
CG BUSY
ØM BUSY
EE BUSY
MC BUSY
TRN_OK
SØC-IN
SYNC_-ØET
LANC TEST
P27/RMC1
P26/SCK0
P25/SO0
P24/SI0
CMOØ
V0
V1
V2
V3
GNØ
MECH CS
SCK
SI
SO
RESET
POWER SW
STBY LEØ
POWER LEØ
KEY B1
KEY B2
KEY B3
KEY B4
PRINT LEØ
D+5V
EXP.7
HALF
MC BUSY
TRN OK
POWER ON
VØ
CN005 7PIN
TO HM-22 BOARD CN706
TO HM-22
CN006 7PIN
TO KY-15 BOARD CN801
TO KY-14
CN007 7PIN
TO KY-15 BOARD CN802
TO KY-14
TO FMY-13
TO FMY-13
TO FMY-13
TO FMY-13
TO FMY-13
TO FMY-13
TO FMY-13 (1/3)
XTL901 10MHZ
Q902
LANC OUT SW
Q903
LANC IN SW

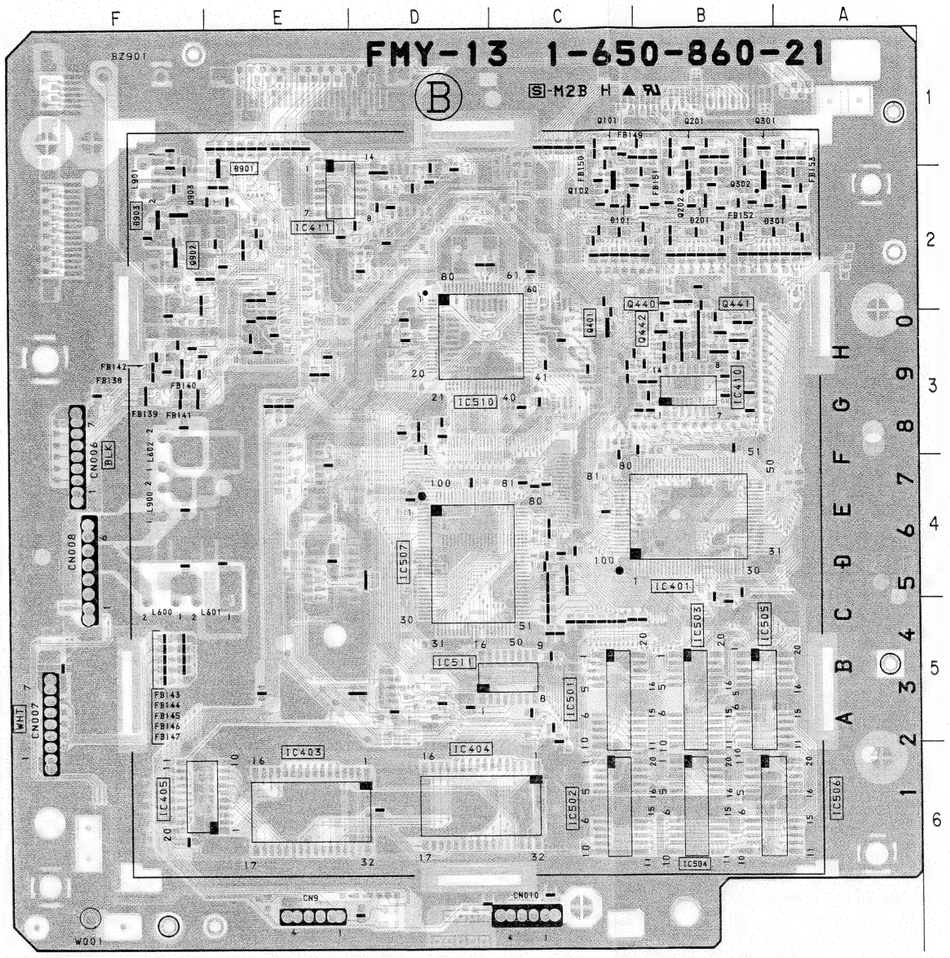

CN005
7PIN
1 Ø GNØ
2 MECH CS
3 SCK
4 SI
5 SO
6 RESET
7 Ø GNØ
TO HM-22
TO HM-22 BOARD CN706
R602 220
R603 220
R604 220
R605 220
CL801
CL802
CL803
CL804
CL805
FB137
CN006 7PIN
7 UNSWØ +5V
6 REMORT CONTROL
5 POWER SW
4 STBY LEØ
3 Power LEØ
2 ERROR LEØ
1 GNØ
TO KY-14
TO KY-14
TO KY-15 BOARD CN801
CL806
FB138
CL807
FB139
CL808
FB140
CL809
FB141
CL810
FB142
CL811
R816 0
R817 0
CN007 7PIN
7 UNSWØ Ø+5V
6 KEY B1
5 KEY B2
4 KEY B3
3 D+5V
2 PRENT LEØ
1 GNØ
TO KY-14
TO KY-15 BOARD CN802
CL812
FB143
CL813
FB144
CL814
FB145
CL815
CL816
FB147
CL817
R818 0
R819 5.1k
R820 5.1k
R821 5.1k
R822 5.1k
26 EXP.7
13 HALF
TO FMY-13 (1/3)
16 MC BUSY
34 xTRN OK
TO FMY-13 (2/3)
90 Ø GNØ
TO FMY-13 (1/3)
12 RESET
TO FMY-13 (2/3)
82 UNSWØ Ø+5V
TO FMY-13 (1/3)
22 POWER ON
19 VØ
TO FMY-13 (1/3)
L901
10µ
C902
0.1
25V
F
C901
0.1
25V
F
TO FMY-13 (1/3)


1
2Vp-p
H
CC101, 103
5
4.4Vp-p
H
IC401 46PIN
2
2Vp-p
H
CC201, 203
6
4.4Vp-p
H
IC513 3PIN
3
2Vp-p
H
CC301, 303
7
1.35Vp-p
10MHz
IC901 3PIN
4
5Vp-p
H
IC401 45PIN
8
4.4Vp-p
32KHz
IC901 100PIN

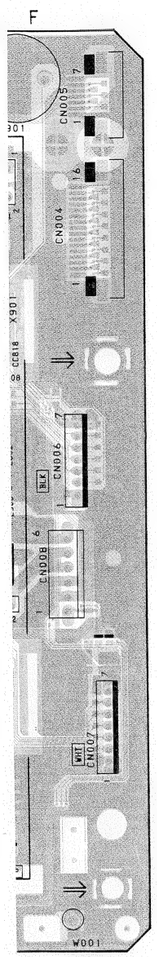
FMY-13 (FRAME MEMORY)



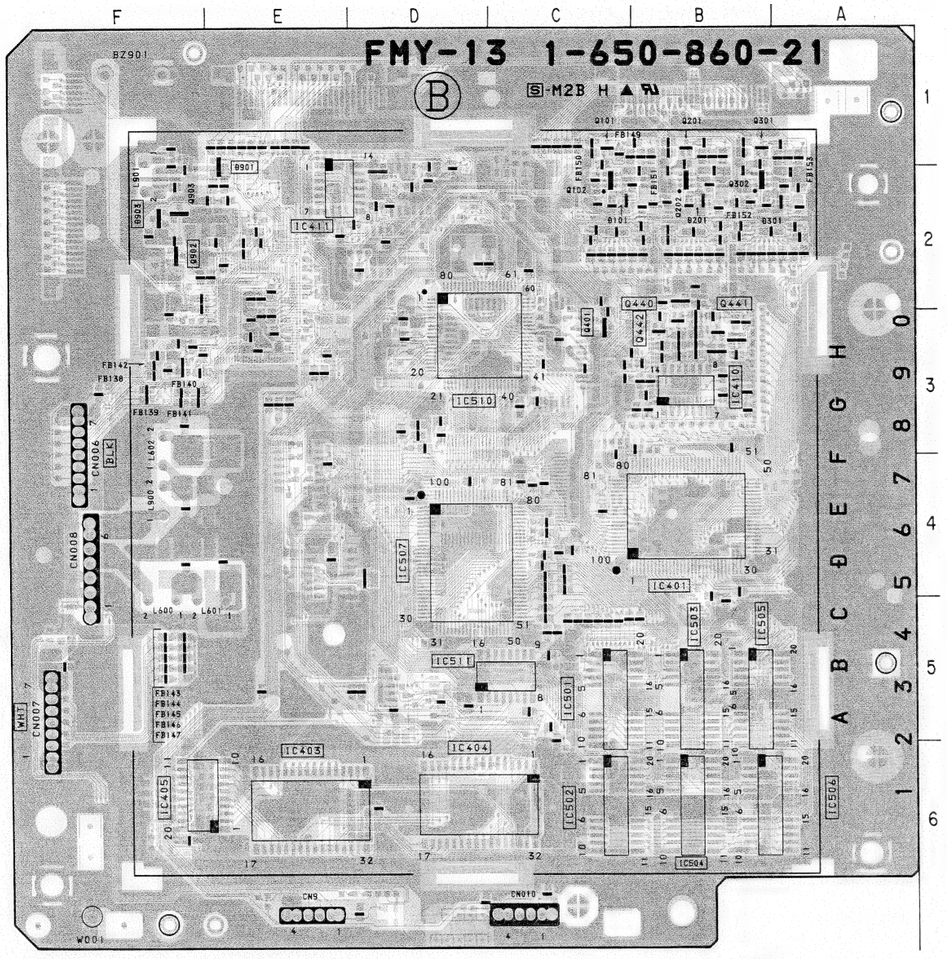
FMY-13 -COMPONENT SIDE-
1-650-860-21



FMY-13 -SOLDERING SIDE-
1-650-860-21



3 -COMPONENT SIDE-
21



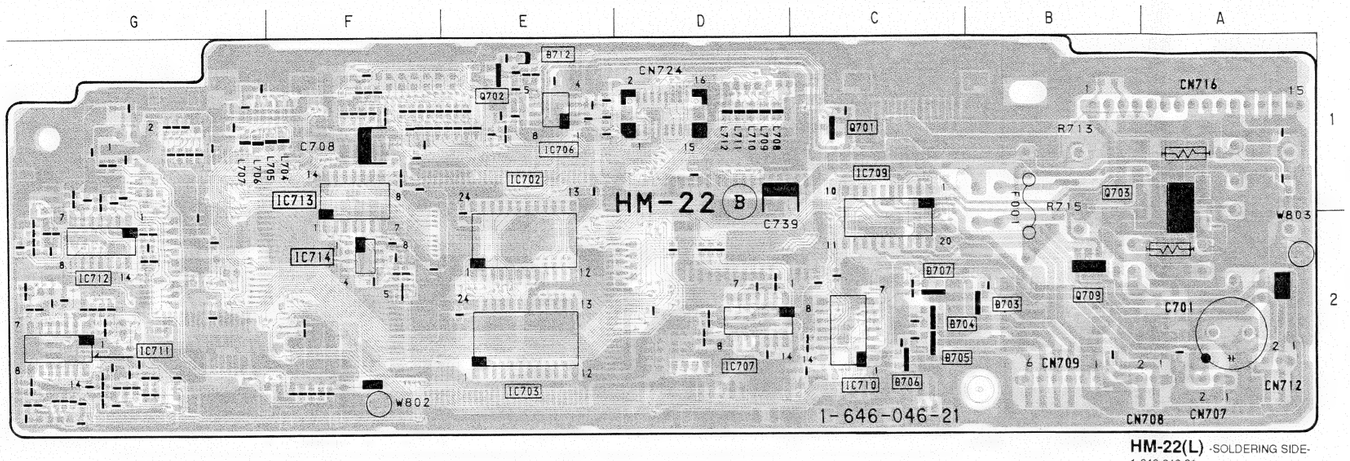
FMY-13 -SOLDERING SIDE-
1-650-860-21

FMY-13 BOARD

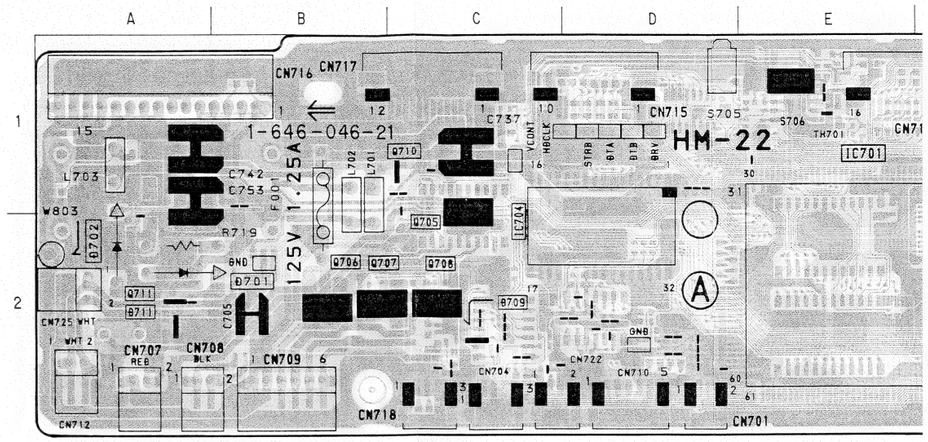
BZ901	F-1	
CN001	B-1	
CN002	E-1	
CN004	F-2	
CN005	F-1	
CN006	F-3	
CN007	F-5	
CN008	F-4	
CN009	E-6	
CN010	C-6	
D101	C-2	S
D201	B-2	S
D301	B-2	S
D901	E-1	S
D903	F-2	S
DL501	B-4	
DL502	E-2	
FL001	D-1	
FL002	D-1	
FL003	D-1	
IC501	C-5	S
IC502	C-6	S
IC503	B-5	S
IC504	B-6	S
IC505	B-5	S
IC506	A-6	S
IC507	D-4	S
IC508	C-3	
IC509	C-4	
IC510	D-3	S
IC511	D-5	S
IC512	E-3	
IC513	D-5	
IC514	E-2	
IC515	E-4	
IC516	D-1	
IC901	E-3	
IC902	E-1	
L600	F-5	
L601	E-5	
L602	F-3	
L900	F-4	
L901	F-2	
Q101	C-1	S
Q102	C-2	S
Q201	B-1	S
Q202	B-2	S
Q301	B-1	S
Q302	B-2	S
Q401	C-3	S
Q801		
Q902	F-2	S
X501	D-2	
X901	F-2	
XTL901	F-2	

S:SOLDERING SIDE

HM-22 (THERMAL HEAD CONTROL) DUS-12 (PAPER EJECT MOTOR CONTROL) SU-10 (EJECT MOTOR) SW-39 (PAPER TRAY SENSOR) SW-41 (PAPER OUT SENSOR) SW-42 (PAPER CHECK SENSC
SW-211 (RIBBON MARK SENSOR) SW-212 (HEAD POSITION SENSOR) SW-213 (PAPER ROLLER POSITION SENSOR) SW-214 (RIBBON CASSETTE SWITCH) SW-215 (HEAD MOTOR) SW-216 (RIBBON



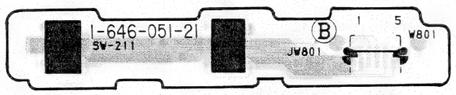
HM-22(L) -SOLDERING SIDE-
1-646-046-21



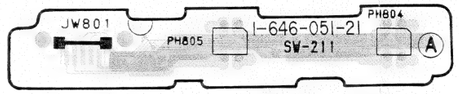
HM-22 BOARD

CN701	D-2		IC706	E-1	S		
CN702	F-2		IC707	D-2	S		
CN703	G-1		IC708	G-2			
CN704	C-2		IC709	C-2	S		
CN705	G-2		IC710	D-2	S		
CN706	G-1		IC711	G-2	S		
CN707	A-2		IC712	G-2	S		
CN708	A-2		IC713	F-1	S		
CN709	B-2		IC714	F-2	S		
CN710	D-2						
CN711	G-2		L701	B-1			
CN712	A-2		L702	B-1			
CN713	G-2		L703	A-1			
CN714	F-1		L704	F-1	S		
CN715	D-1		L705	F-1	S		
CN716	A-1		L706	G-1	S		
CN717	C-1		L707	G-1	S		
CN718	C-2		L708	D-1	S		
CN719			L709	D-1	S		
CN721	G-1		L710	D-1	S		
CN722	C-2		L711	D-1	S		
CN723	G-2		L712	D-1	S		
CN724	D-1	S					
CN725	A-2		Q701	C-1	S		
			Q702	E-1	S		
D701	A-2		Q703	B-1	S		
D702	A-2		Q705	C-2			
D703	B-2	S	Q706	B-2			
D704	C-2	S	Q707	B-2			
D705	C-2	S	Q708	C-2			
D706	C-2	S	Q709	B-2	S		
D707	C-2	S	Q710	C-1			
D709	C-2		Q711	A-2			
D711	A-2						
D712	E-1	S	S705	D-1			
			S706	E-1			
F001	B-1	S					
			TH701	E-1			
IC701	E-2						
IC702	E-2	S	X701	F-2			
IC703	E-2	S	X702	F-2			
IC704	D-2		X703	F-2			

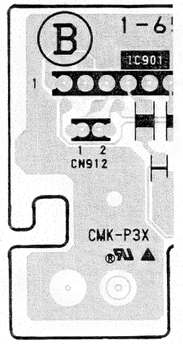
S:SOLDERING SIDE

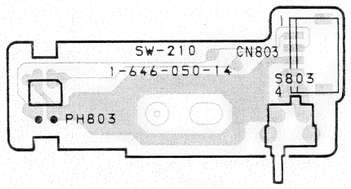


SW-211 -SOLDERING SIDE-
1-646-051-21

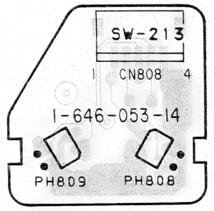


SW-211 -COMPONENT SIDE-
1-646-051-21

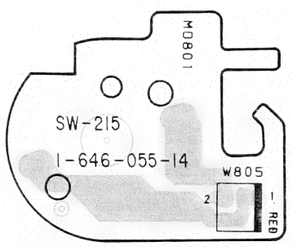




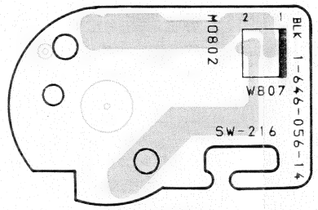
SW-210 -SOLDERING SIDE-
1-646-050-14



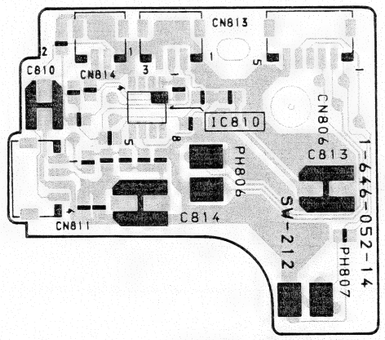
SW-213 -SOLDERING SIDE-
1-646-053-14



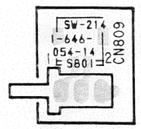
SW-215 -SOLDERING SIDE-
1-646-055-14



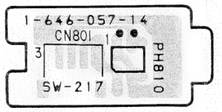
SW-216 -SOLDERING SIDE-
1-646-056-14



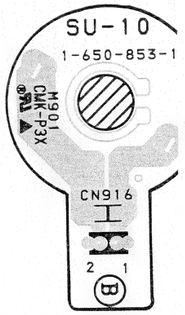
SW-212 -COMPONENT SIDE-
1-646-052-14



SW-214 -SOLDERING SIDE-
1-646-054-14

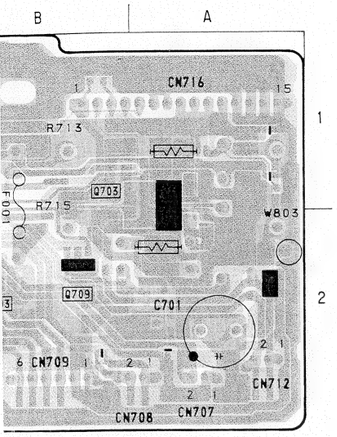


SW-217 -SOLDERING SIDE-
1-646-057-14

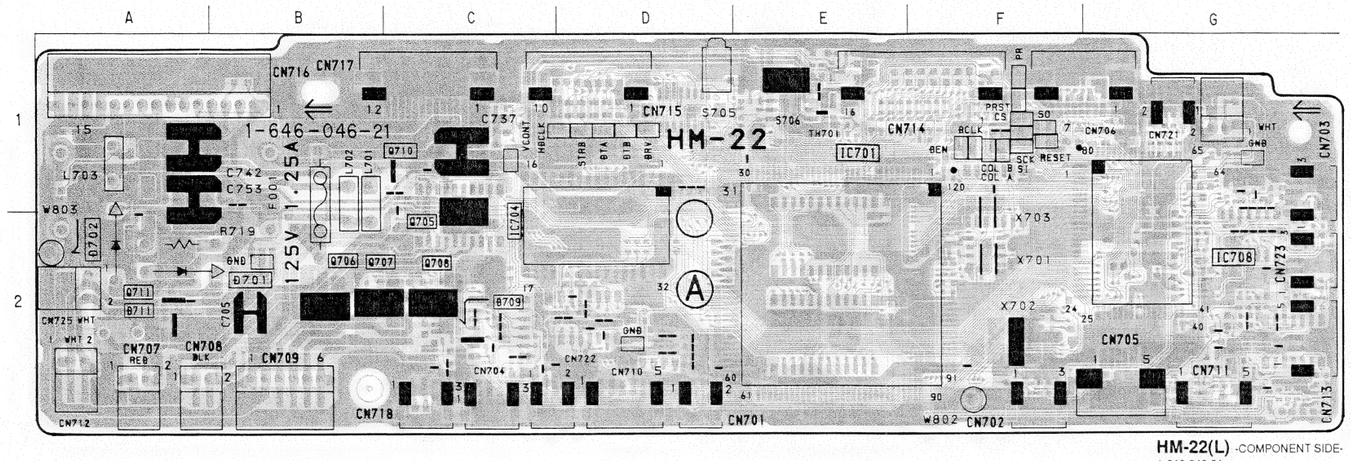


SU-10 -SOLDERING
1-650-853-15

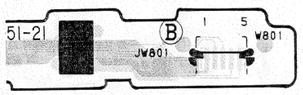
(EJECT MOTOR) SW-39 (PAPER TRAY SENSOR) SW-41 (PAPER OUT SENSOR) SW-42 (PAPER CHECK SENSOR) SW-208 (PAPER EDGE SENSOR) SW-210 (RIBBON CODE SENSOR)
ROLLER POSITION SENSOR) SW-214 (RIBBON CASSETTE SWITCH) SW-215 (HEAD MOTOR) SW-216 (RIBBON MOTOR) SW-217 (JAMMING DET SENSOR)



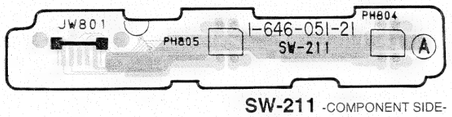
HM-22(L) -SOLDERING SIDE-
1-646-046-21



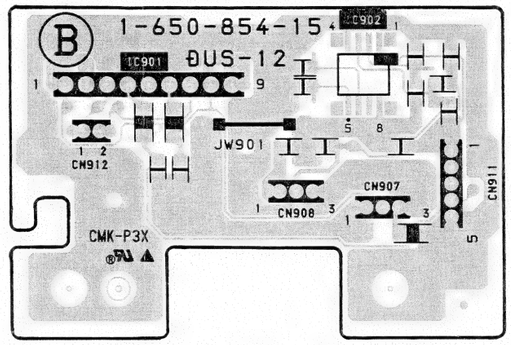
HM-22(L) -COMPONENT SIDE-
1-646-046-21



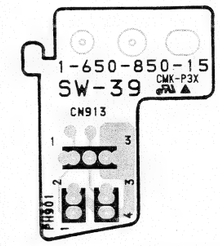
SW-211 -SOLDERING SIDE-
1-646-051-21



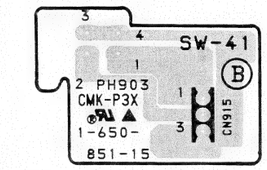
SW-211 -COMPONENT SIDE-
1-646-051-21



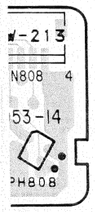
DUS-12 -SOLDERING SIDE-
1-650854-15



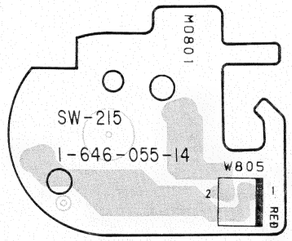
SW-39 -SOLDERING SIDE-
1-650-850-15



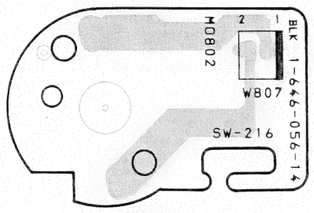
SW-41 -SOLDERING SIDE-
1-650-851-15



ERING SIDE-

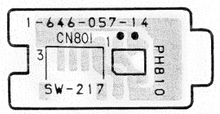


SW-215 -SOLDERING SIDE-
1-646-055-14

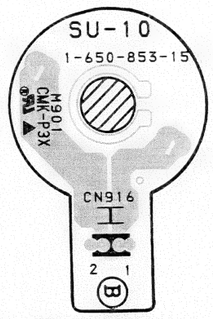


SW-216 -SOLDERING SIDE-
1-646-056-14

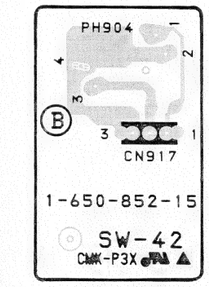
ERING SIDE-



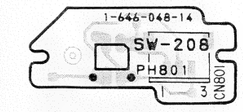
SW-217 -SOLDERING SIDE-
1-646-057-14



SU-10 -SOLDERING SIDE-
1-650-853-15



SW-42 -SOLDERING SIDE-
1-650-852-15



SW-208 -SOLDERING SIDE-
1-646-048-14

HM-22 (THERMAL HEAD CONTROL) SW-212 (HEAD POSITION SENSOR)

DUS-12 (PAPER EJECT MOTOR CONTROL) SW-213 (PAPER ROLLER POSITION SENSOR)

SU-10 (EJECT MOTOR)

SW-39 (PAPER

SW-214 (RIBBON CASSETTE SWITCH)

1 2 3 4 5 6 7 8 9

A B C D E F G H I J K L M

SW-41 BOARD
PAPER OUT SENSOR
CN915 SP L-NTL ELC02.0
5 GND
2 PAPER OUT SEN
1 PAPER OUT LED

SW-42 BOARD
PAPER CHECK SENSOR
CN917 SP L-TEL ELC02.0
3 GND
2 PAPER CHECK SEN
1 PAPER CHECK LED

SW-39 BOARD
ARM HOME POSITION SENSOR
CN913 SP L-BLK ELC02.0
3 GND
2 ARM HOME SEN
1 ARM HOME LED

SW-211 BOARD
W801 SP FCC 1.0
1 RIBBON MARK LED A
2 RIBBON MARK SEN A
3 RIBBON MARK LED B
4 RIBBON MARK SEN B
5 GND
PAPER MARK SENSOR A
PH804 GP2S40
PH805 GP2S40 RIBBON MARK SENSOR B

SW-212 BOARD
CN806 5P 1.5 RED
1 HEAD POSI LED A
2 HEAD POSI SEN A
3 HEAD POSI LED B
4 HEAD POSI SEN B
5 GND
IC810 LM358DR RIBBON CODE SENSOR AMP
PH806 GP2S40 HEAD POSITION A SENSOR
PH807 GP2S40 HEAD POSITION B SENSOR
CN811 4P 1.5 NTL
1 RIBBON CODE LED
2 RIBBON CODE SEN
3 GND
4 RIBBON DOOR SW
CN813 3P 1.5 BLU
+5V
RIBBON CODE OUT
GND
CN814 2P 1.5 NTL
1 RIBBON DOOR SW
2 GND

SW-208 BOARD
CN801 3P 1.5 NTL
1 PAPER EDGE LED
2 PAPER EDGE SEN
3 GND
PH801 GP2S40 PAPER EDGE SENSOR

SW-210 BOARD
CN803 4P 1.5 NTL
1 RIBBON CODE LED
2 RIBBON CODE SEN
3 GND
4 RIBBON DOOR SW
PH803 GP2S40 RIBBON CODE SENSOR
S803 RIBBON DOOR SW

SW-213 BOARD
CN808 5P 1.5 NTL
1 P R POSI LED A
2 P R POSI SEN A
3 P R POSI LED B
4 P R POSI SEN B
5 GND
PAPER ROLLER POSITION A SENSOR
PH808 GP2S40
PH809 GP2S40 PAPER ROLLER POSITION B SENSOR

SW-214 BOARD
CN809 2P 1.5 BLU
1 RIBBON CASSETTE SW
2 GND
S801 RIBBON CASSETTE SW

SW-217 BOARD
CN810 3P 1.5 RED
1 JAMMING DET LED
2 JAMMING DET SEN
3 GND
PH810 GP2S40 JAMMING DET SENSOR

SW-215 BOARD
CN806 2P 2.0 RED
1 HEAD MOTOR X
2 HEAD MOTOR Y
M801 HEAD MOTOR

SW-216 BOARD
CN807 2P 2.0 BLK
1 RIBBON MOTOR X
2 RIBBON MOTOR Y
M802 RIBBON MOTOR

DUS-12 BOARD
IC902 LM393PS ARM HOME POSITION SENSOR AMP
IC901 M54544AL EJECT MOTOR DRIVE
CN907 SP H-NTL ELC02.0
+5V
SWD +12V
GND
TO POWER SUPPLY CN904
CN908 3P H-BLK ELC02.0
ARM HOME LED
ARM HOME SEN
GND
CN912 2P H-NTL ELC02.0
2 EJECT MOTOR Y
1 EJECT MOTOR X
CN915 2P L-BLK ELC02.0
EJECT MOTOR X
EJECT MOTOR Y
EJECT MOTOR
CN911 SP H-NTL ELC02.0
1 INPUT0
2 INPUT1
3 INPUT2
4 OUTPUT1
5 GND
LND009
LND010

SU-10 BOARD

TO POWER SUPPLY CN903

M901 PLATEN MOTOR
M902 FAN MOTOR
M903 FAN MOTOR

SU-10 (EJECT MOTOR) SW-39 (PAPER TRAY SENSOR) SW-41 (PAPER OUT SENSOR) SW-42 (PAPER CHECK SENSOR) SW-208 (PAPER EDGE
SW-214 (RIBBON CASSETTE SWITCH) SW-215 (HEAD MOTOR) SW-216 (RIBBON MOTOR) SW-217 (JAMMING DET SENSOR)

7 8 9 10 11 12 13 14 15 16 17 18

SW-208 BOARD

PH801 GP2540
PAPER EDGE SENSOR

SW-210 BOARD

PH803 GP2540
RIBBON CODE SENSOR

S803
RIBBON DOOR SW

SW-213 BOARD

PAPER ROLLER POSITION A SENSOR
PH808 GP2540
PH809 GP2540
PAPER ROLLER POSITION B SENSOR

SW-214 BOARD

S801
RIBBON CASSETTE SW

SW-217 BOARD

PH810 GP2540
JAMMING DET SENSOR

SW-215 BOARD

M801
HEAD MOTOR

SW-216 BOARD

M802
RIBBON MOTOR

SU-10 BOARD

EJECT MOTOR

HM-22 BOARD

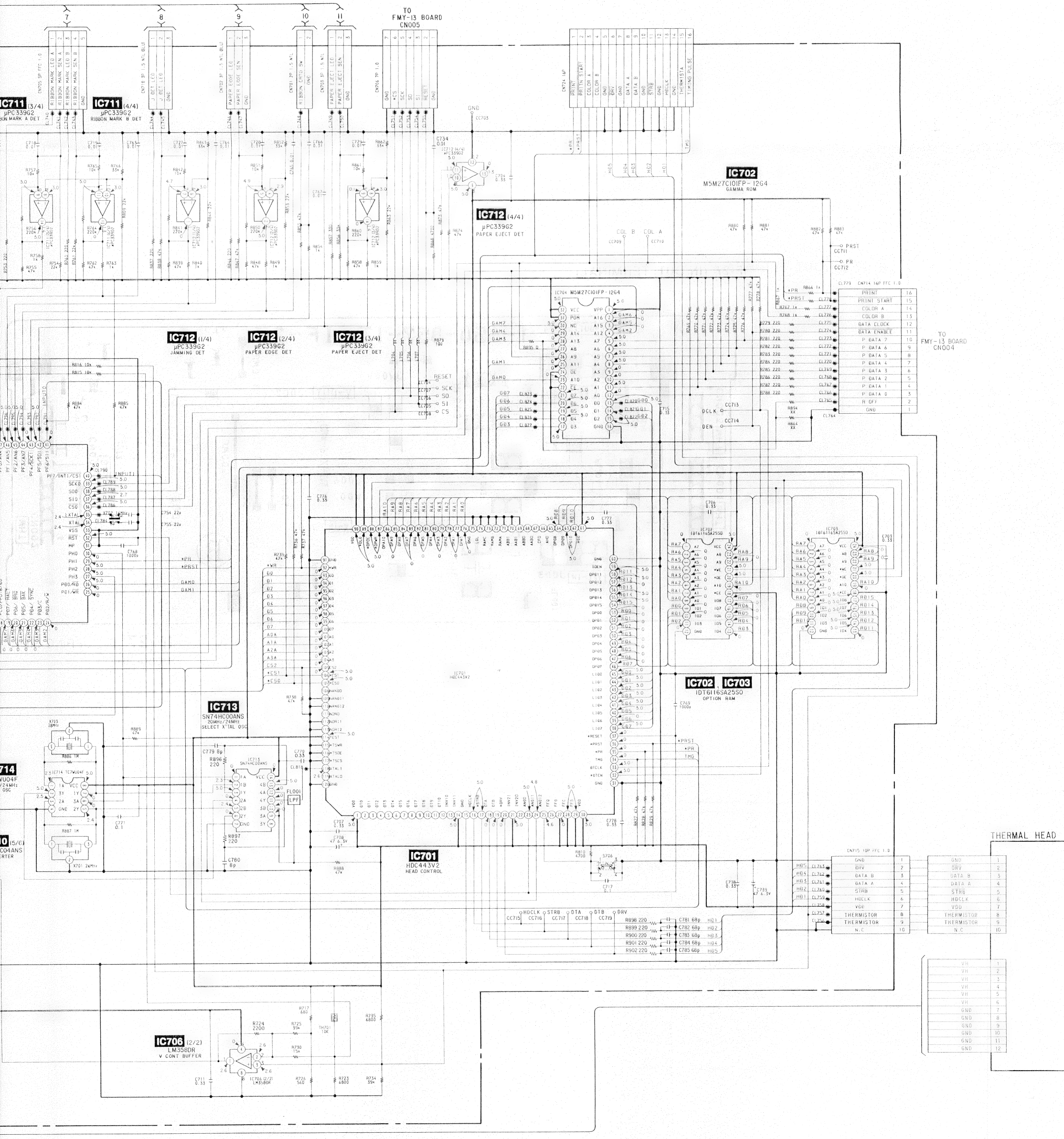
IC707 (1/4) µPC339G2 HEAD POSITION A DET
IC707 (2/4) µPC339G2 HAED POSITION B DET
IC707 (3/4) µPC339G2 ROLLER POSITION A DET
IC707 (4/4) µPC339G2 ROLLER POSITION B DET
IC711 (1/4) µPC339G2 PAPER TRAY DET
IC711 (2/4) µPC339G2 RIBBON CODE DET
IC711 (3/4) µPC339G2 RIBBON MARK A DET
IC711 (4/4) µPC339G2 RIBBON MARK B DET
IC708 CXP80P116Q-1 MECHANISM CONTROL
IC710 (1/6) – (4/6) SN74HC04ANS INVERTER
IC710 (5/6) SN74HC04ANS INVERTER
IC710 (6/6) SN74HC04ANS INVERTER
IC706 LM358DR V CONT AMP
IC709 MB3863PF-G-BND RIBBON MOTOR, HEAD MOTOR DRIVE
IC714 TC7WU04F 20MHz/24MHz XTAL OSC

CN717 12P FFC 1.0
CN716 15P 2.0 NTL
TO POWER SUPPLY CN903
Q710 2SC1623-L6 Q710 22V SWITCH
Q705, 706, 707, 708 PLATEN MOTOR DRIVE
Q703, 711 VTH SWITCH
Q701 SWITCH
Q702 SWITCH
Q709 FAN MOTOR DRIVE
M901 PLATEN MOTOR
M902 FAN MOTOR
M903 FAN MOTOR
CN709 6P 2.0 NTL
CN707 2P 2.0 RED
CN708 2P 2.0 BLK
CN712 2P 2.0 NTL
CN725 2P 2.0 NTL
CN713 5P 1.5 NTL

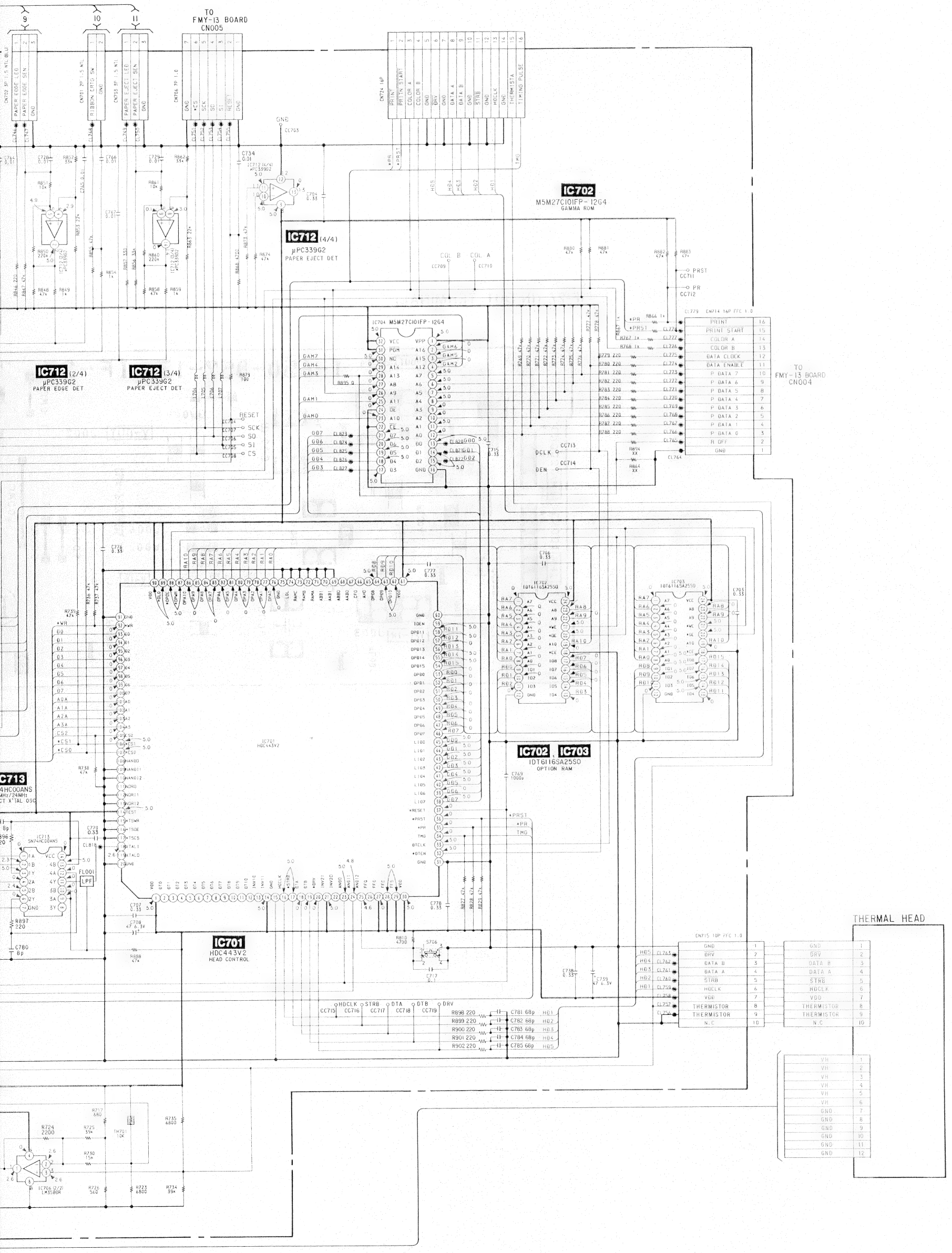
SW-208 (PAPER EDGE SENSOR) SW-210 (RIBBON CODE SENSOR) SW-211 (RIBBON MARK SENSOR)

)

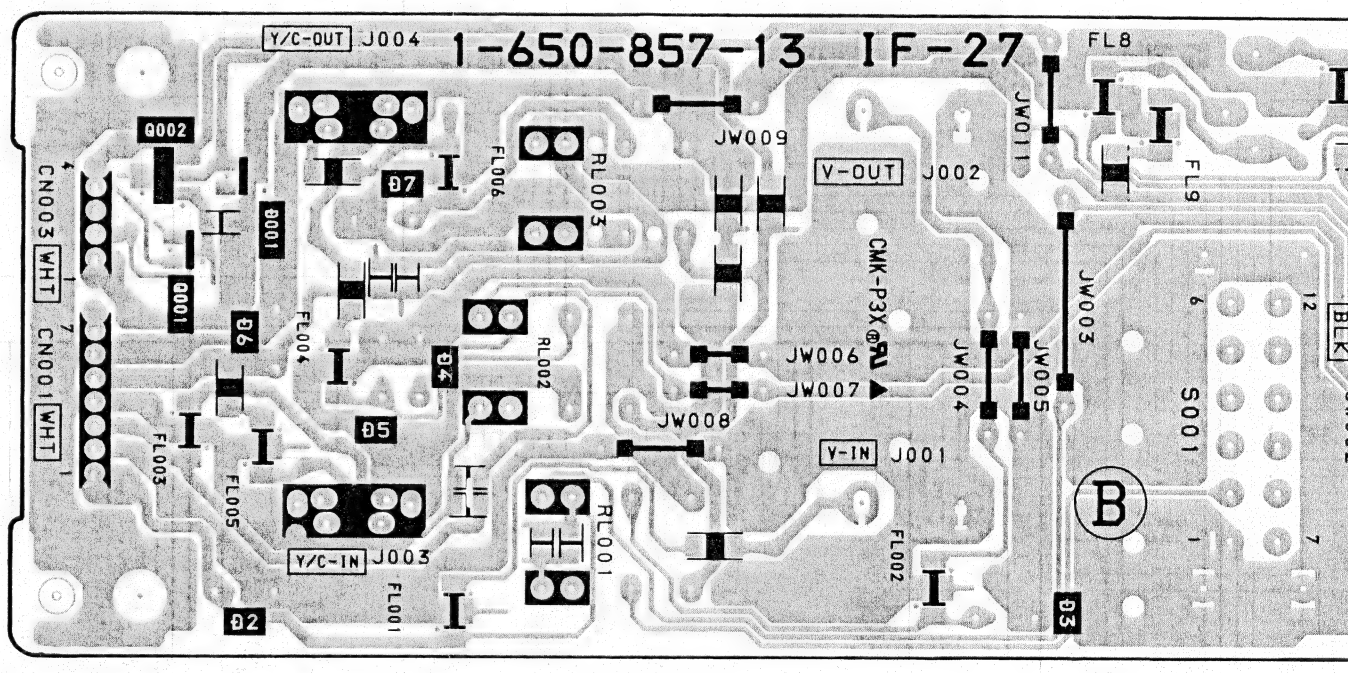
17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28



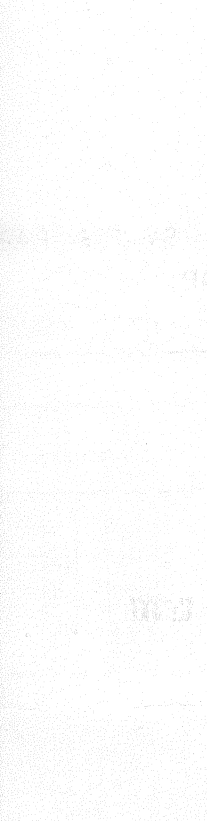
) SW-210 (RIBBON CODE SENSOR) SW-211 (RIBBON MARK SENSOR)



IF-27 (IN/OUT TERMINAL)

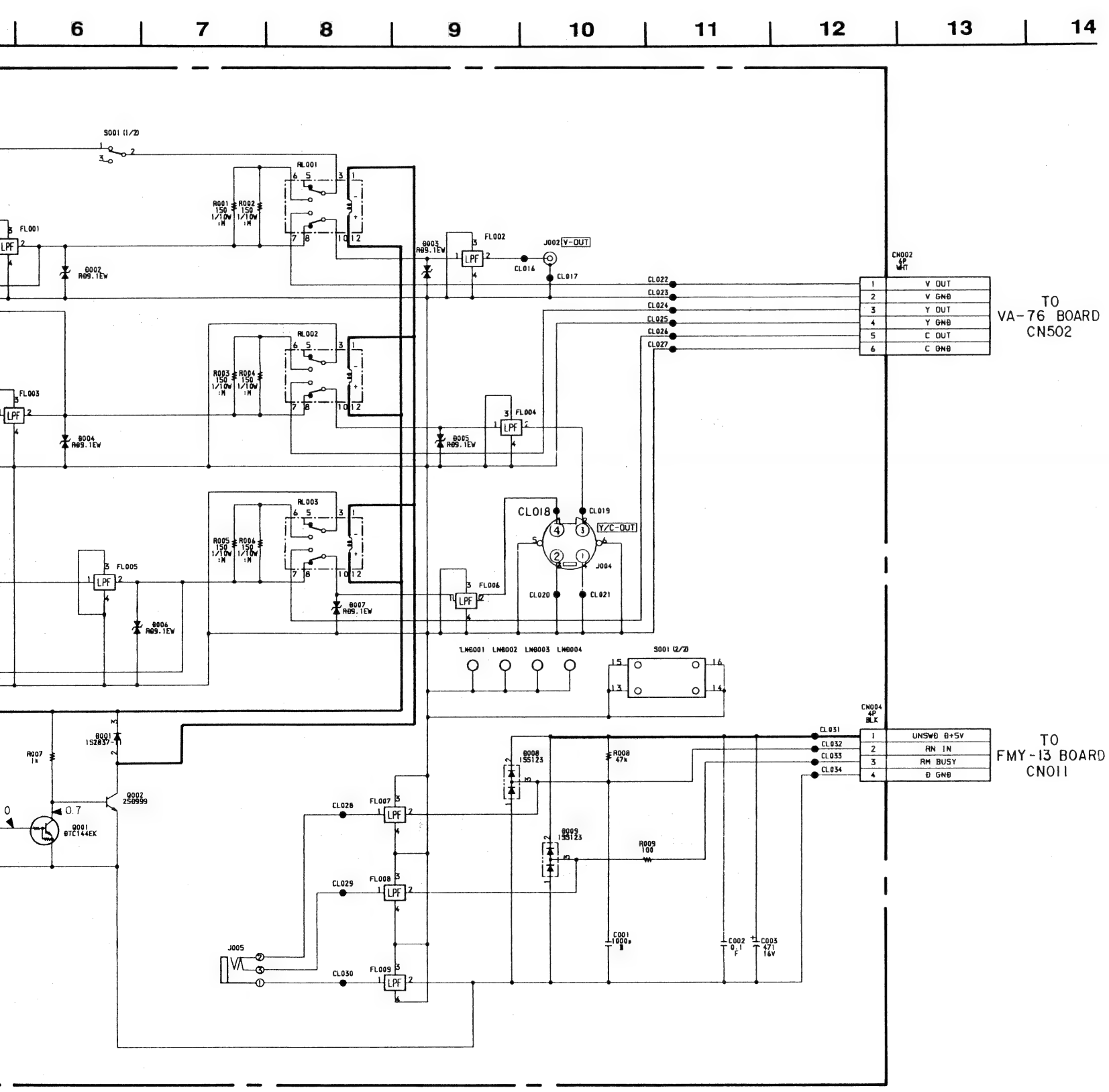


IF-27 -SC
1-650-857-13

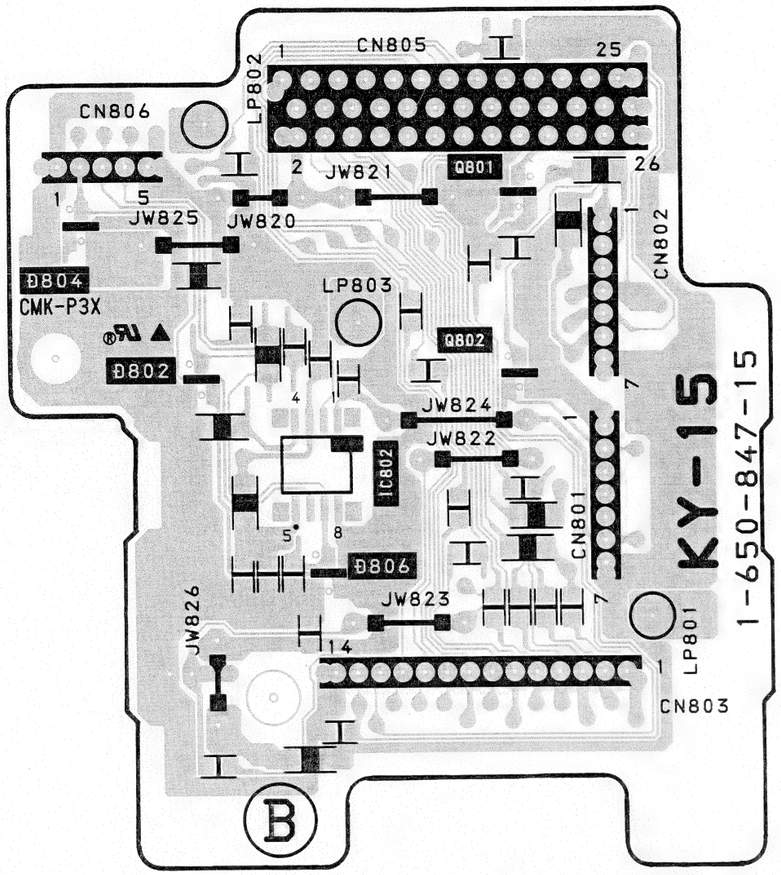


OLDERING SIDE-
B

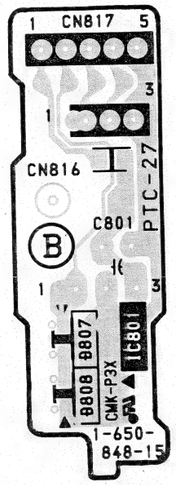
IF-27 (IN/OUT TERMINAL)


S001 (1/2)
RL001
RL002
RL003
R001 150 1/10W :M
R002 150 1/10W :M
R003 150 1/10W :M
R004 150 1/10W :M
R005 150 1/10W :M
R006 150 1/10W :M
FL001
FL002
FL003
FL004
FL005
FL006
FL007
FL008
FL009
LPF
D002 RD9.1EW
D003 RD9.1EW
D004 RD9.1EW
D005 RD9.1EW
D006 RD9.1EW
D007 RD9.1EW
J002 V-OUT
CL016
CL017
CL018
CL019
Y/C-OUT
J004
CL020
CL021
CL022
CL023
CL024
CL025
CL026
CL027
CN002 6P WHT
1 V OUT
2 V GND
3 Y OUT
4 Y GND
5 C OUT
6 C GND
TO VA-76 BOARD CN502
LN8001 LN8002 LN8003 LN8004
S001 (2/2)
CN004 4P BLK
CL031
CL032
CL033
CL034
1 UNSW 8+5V
2 RN IN
3 RM BUSY
4 8 GND
TO FMY-13 BOARD CN011
D001 1SZ837-T
Q002 2SD999
0.7
Q001 RTC144EK
R007 1k
D008 1SS123
D009 1SS123
R008 47k
R009 100
C001 1000p B
C002 0.1 F
C003 47 16V
J005
CL028
CL029
CL030

KY-15 (FUNCTION SWITCH) PTC-27 (REMOTE CONTROL SENSOR)

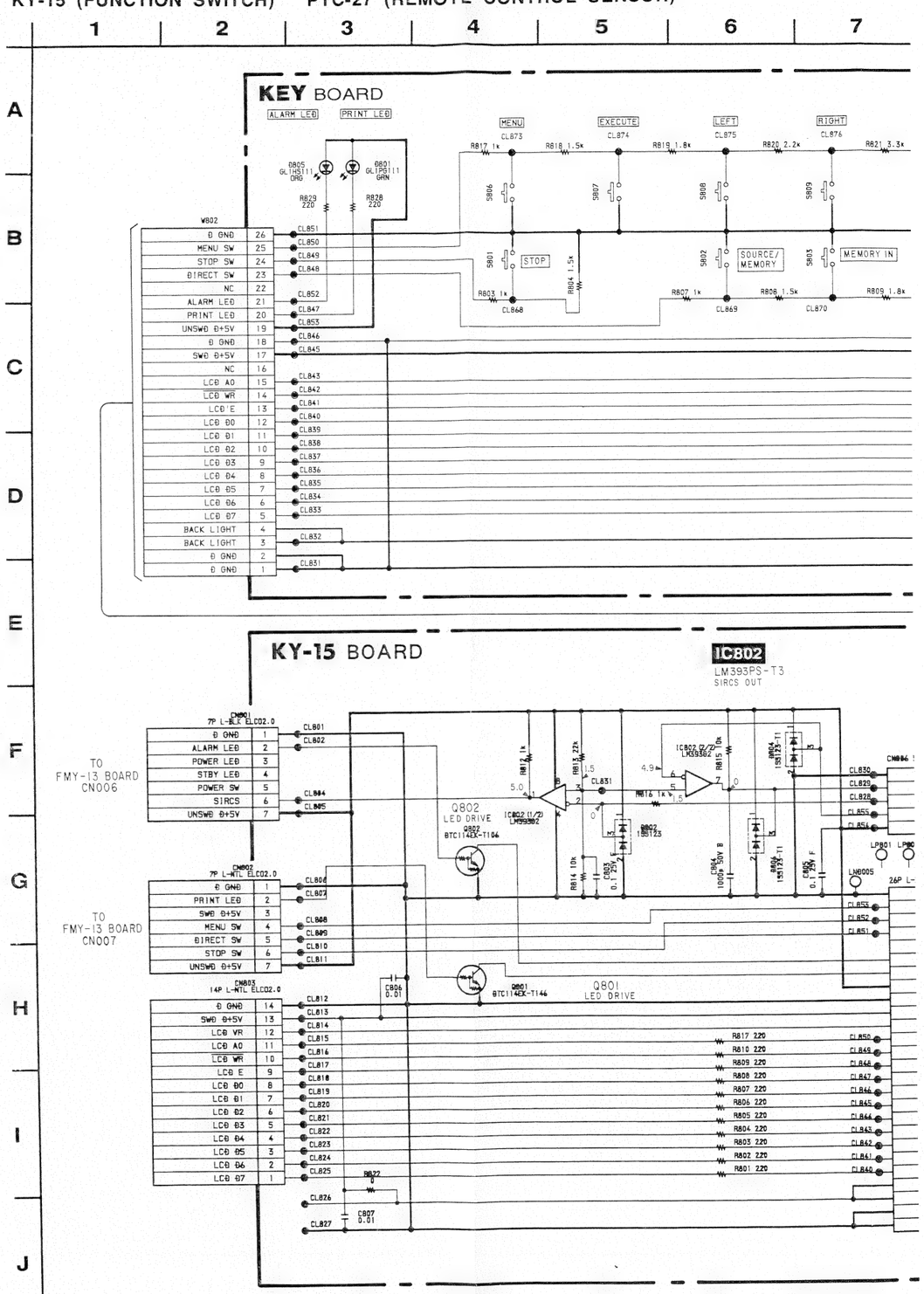


KY-15 -SOLDERING SIDE-
1-650-847-15



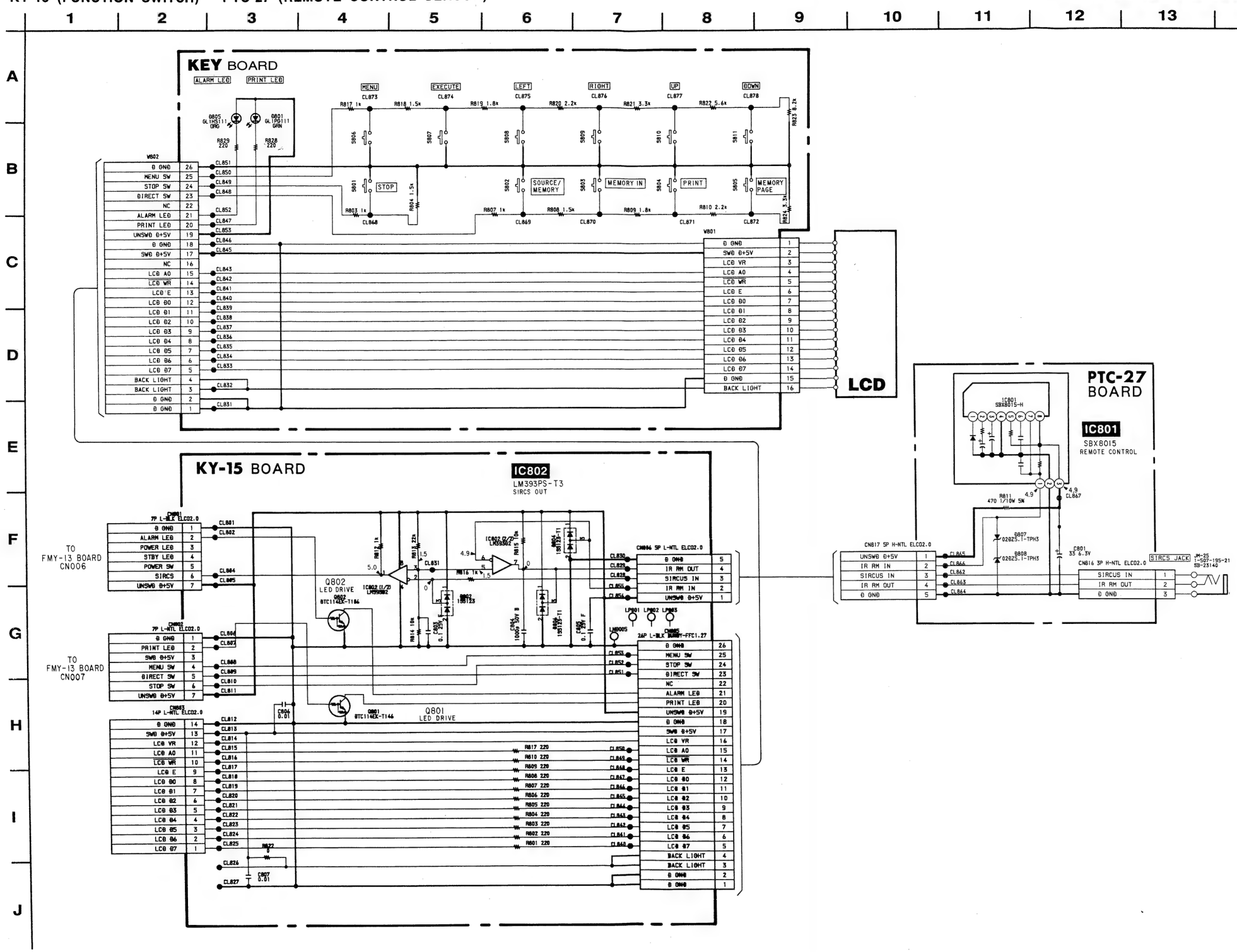
PTC-27 -SOLDERING SIDE-
1-650-848-15

KY-15 (FUNCTION SWITCH) PTC-27 (REMOTE CONTROL SENSOR)



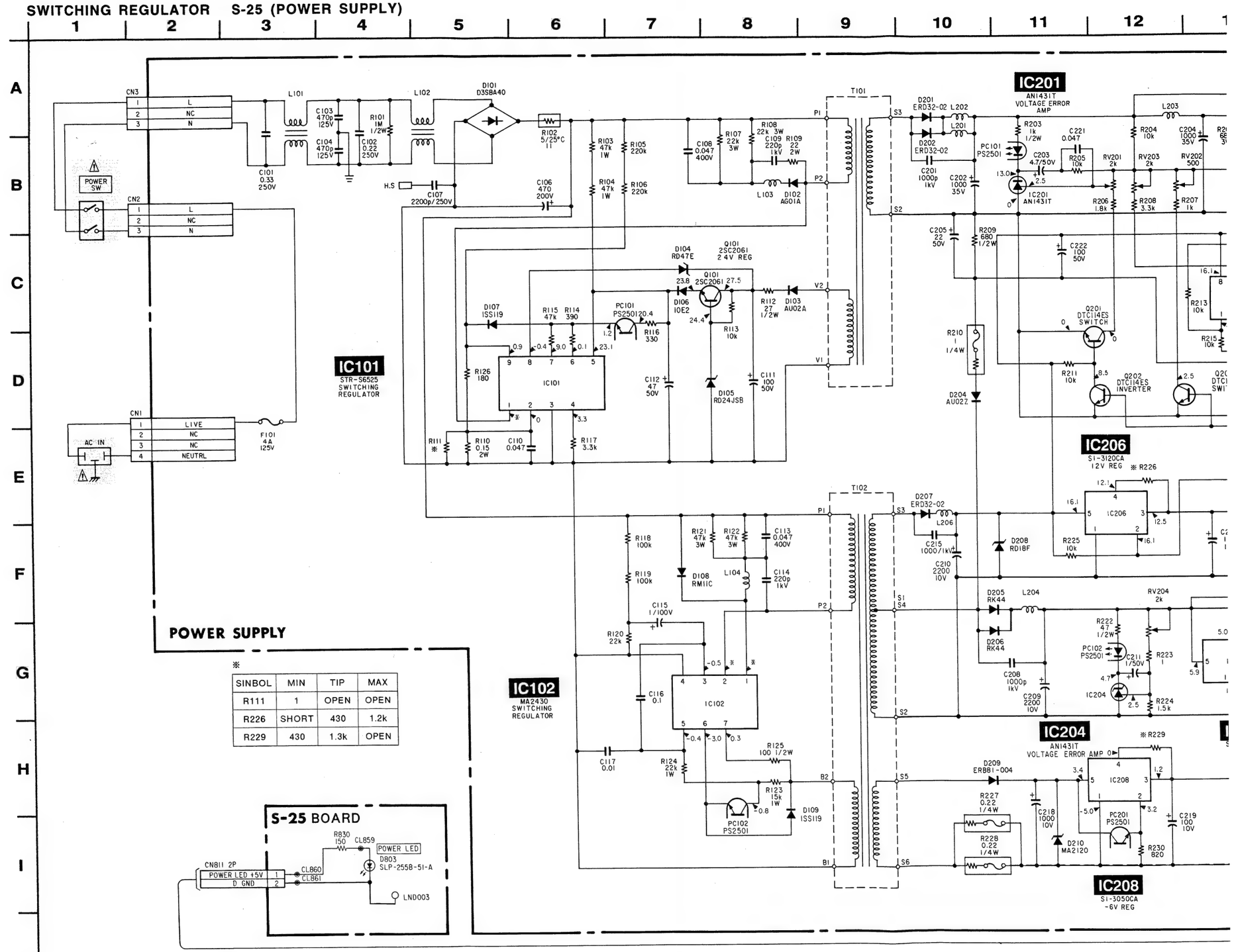
KY-15 (FUNCTION SWITCH) PTC-27 (REMOTE CONTROL SENSOR)

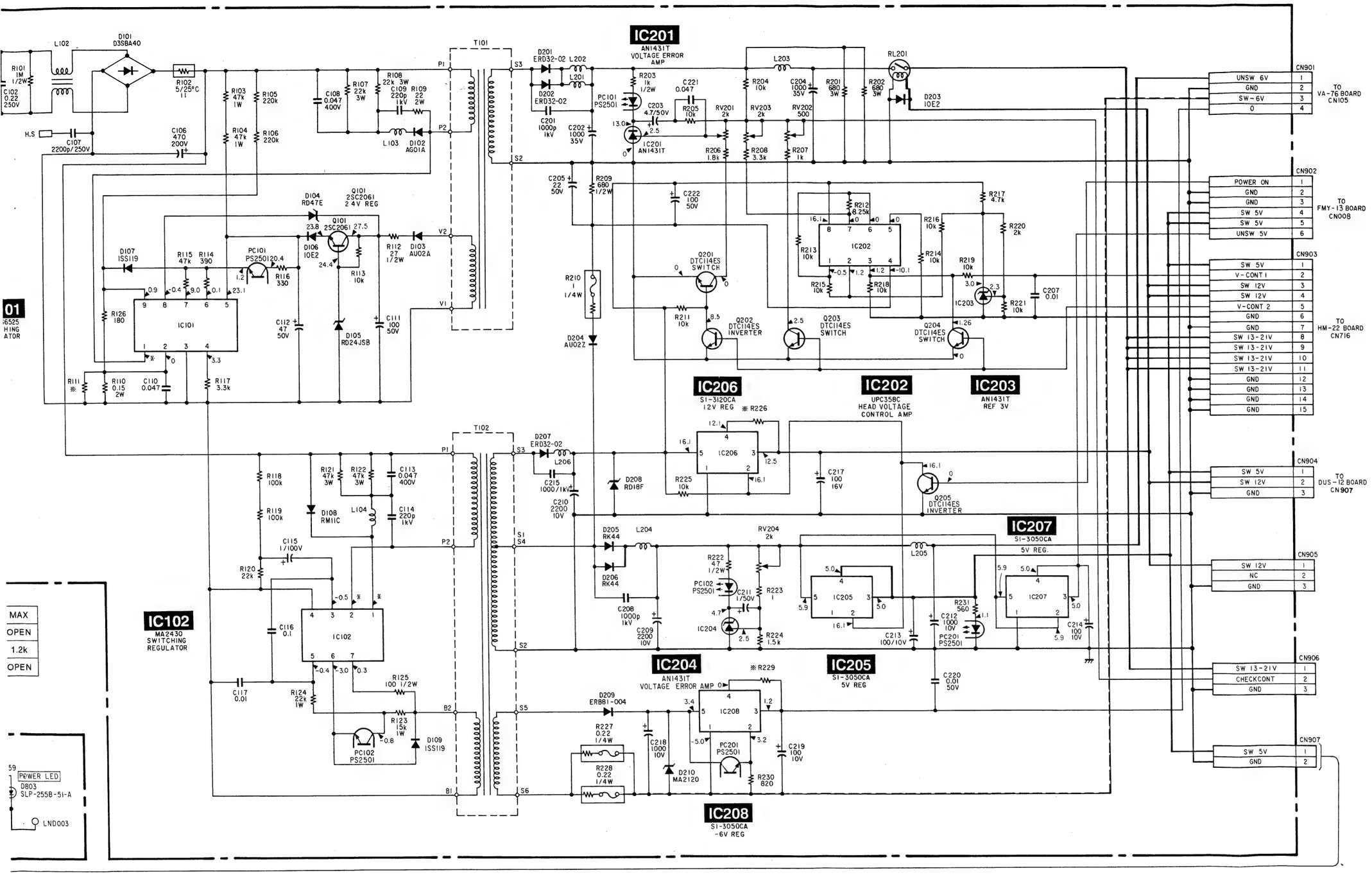
LDERING SIDE-



UP-1200A

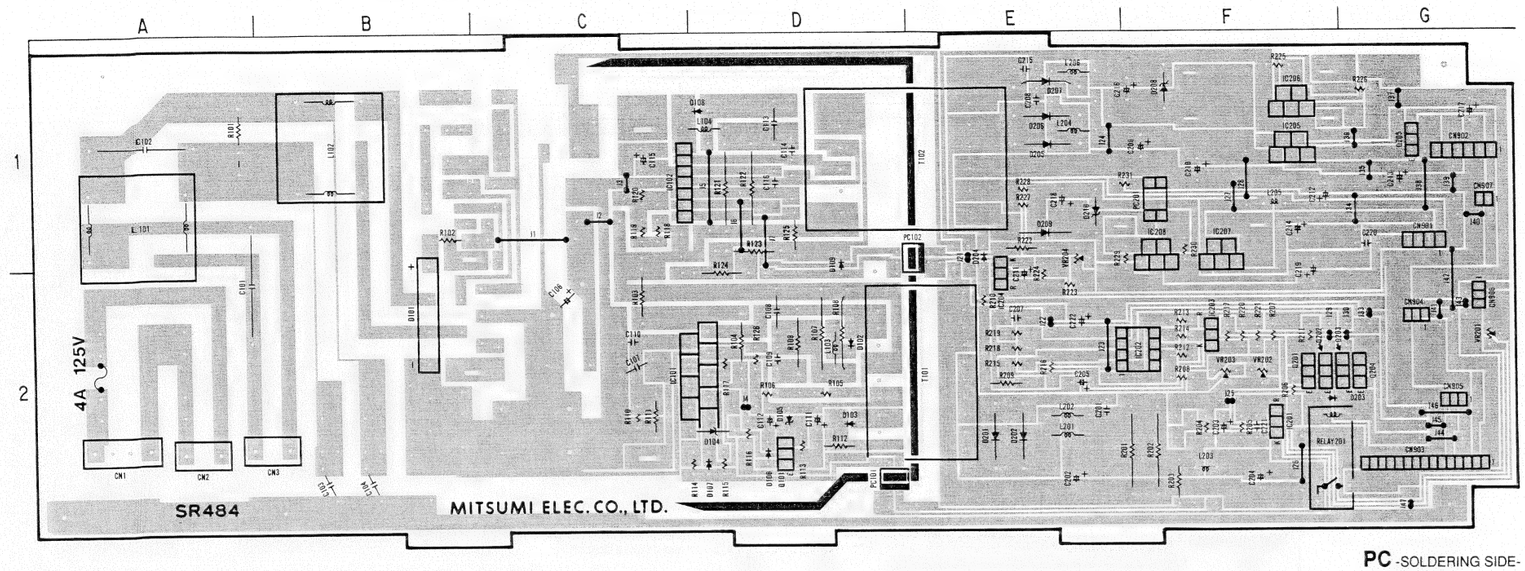
SWITCHING REGULATOR S-25 (POWER SUPPLY)



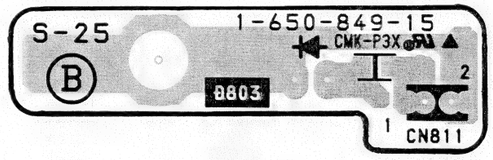

IC201
AN1431T
VOLTAGE ERROR AMP
IC206
SI-3120CA
12V REG
IC202
UPC358C
HEAD VOLTAGE CONTROL AMP
IC203
AN1431T
REF 3V
IC207
SI-3050CA
5V REG.
IC102
MA2430
SWITCHING REGULATOR
IC204
AN1431T
VOLTAGE ERROR AMP
IC205
SI-3050CA
5V REG
IC208
SI-3050CA
-6V REG
CN901
UNSW 6V
GND
SW-6V
0
TO VA-76 BOARD CN105
CN902
POWER ON
GND
GND
SW 5V
SW 5V
UNSW 5V
TO FMY-13 BOARD CN008
CN903
SW 5V
V-CONT 1
SW 12V
SW 12V
V-CONT 2
GND
GND
SW 13-21V
SW 13-21V
SW 13-21V
GND
GND
GND
GND
TO HM-22 BOARD CN716
CN904
SW 5V
SW 12V
GND
TO DUS-12 BOARD CN907
CN905
SW 12V
NC
GND
CN906
SW 13-21V
CHECKCONT
GND
CN907
SW 5V
GND
T101
T102
PC101 PS2501
PC102 PS2501
PC201 PS2501
Q101 2SC2061 2.4V REG
Q201 DTC114ES SWITCH
Q202 DTC114ES INVERTER
Q203 DTC114ES SWITCH
Q204 DTC114ES SWITCH
Q205 DTC114ES INVERTER
D101 D3SBA40
D201 ERD32-02
D202 ERD32-02
D203 10E2
D204 AU02Z
D205 RK44
D206 RK44
D207 ERD32-02
D208 RD18F
D209 ERB81-004
D210 MA2120
D803 SLP-255B-51-A
POWER LED
LND003
RL201
L102
L103
L104
L201
L202
L203
L204
L205
L206
H.S
MAX
OPEN
1.2k
OPEN

UP-1200A

SWITCHING REGULATOR S-25 (POWER SUPPLY)



PC -SOLDERING SIDE-
9-907-230-01



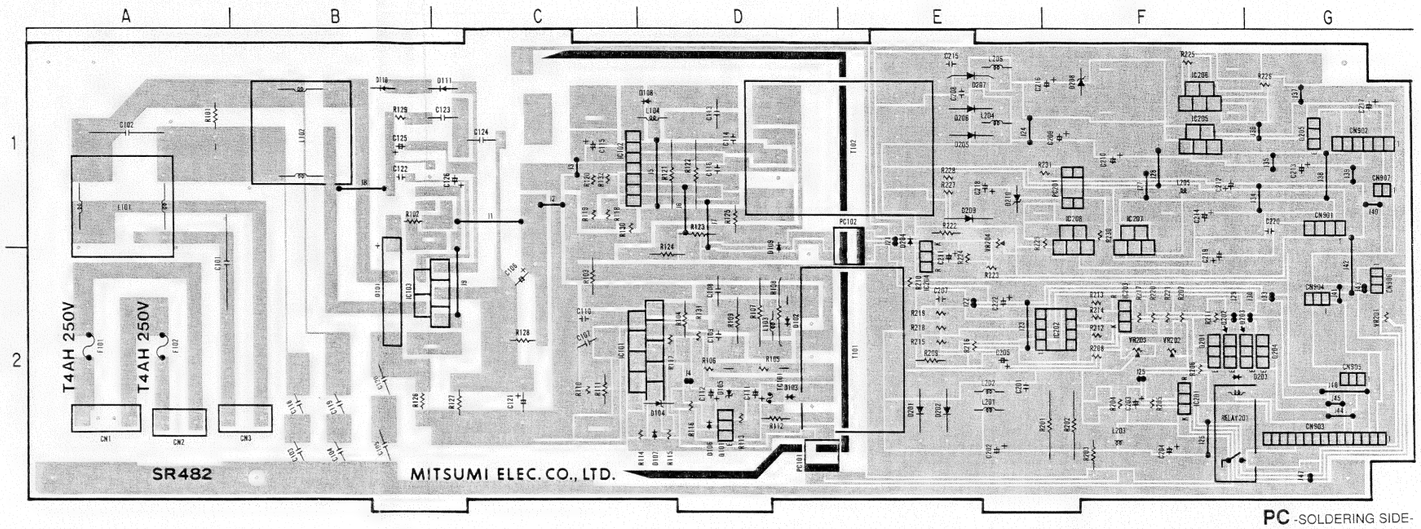
S-25 -SOLDERING SIDE-
1-650-849-15

SWITCHING REGULATOR

CN1	A-2	L101	A-1
CN2	A-2	L102	B-1
CN3	B-2	L103	D-1
CN901	G-1	L104	D-1
CN902	G-1	L201	E-2
CN903	G-2	L202	E-2
CN904	G-2	L203	F-1
CN905	G-2	L204	E-1
CN906	G-2	L205	F-1
CN907	G-1	L206	E-1
D101	B-2	PC101	D-2
D102	D-2	PC102	E-1
D103	D-2	PC201	F-1
D104	D-2		
D105	D-2	Q101	D-2
D106	D-2	Q202	F-2
D107	D-2	Q202	F-2
D108	D-1	Q203	F-2
D109	D-1	Q204	G-2
D201	E-2	Q205	G-1
D202	E-2		
D203	F-2	RL201	F-2
D204	E-1		
D205	E-1	T101	E-2
D206	E-1	T102	E-1
D207	E-1		
D208	F-1	RV201	G-2
D209	E-1	RV202	F-1
D210	E-1	RV203	F-1
		RV204	E-1
F101			
IC101	C-2		
IC102	C-1		
IC201	F-2		
IC202	F-2		
IC203	F-2		
IC204	E-2		
IC205	F-1		
IC206	F-1		
IC207	F-1		
IC208	F-1		

UP-1200AEPM

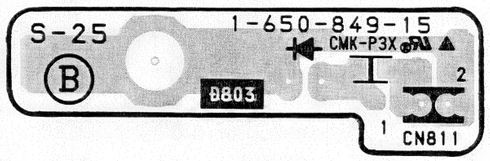
SWITCHING REGULATOR S-25 (POWER SUPPLY)



PC -SOLDERING SIDE-
9-907-119-01

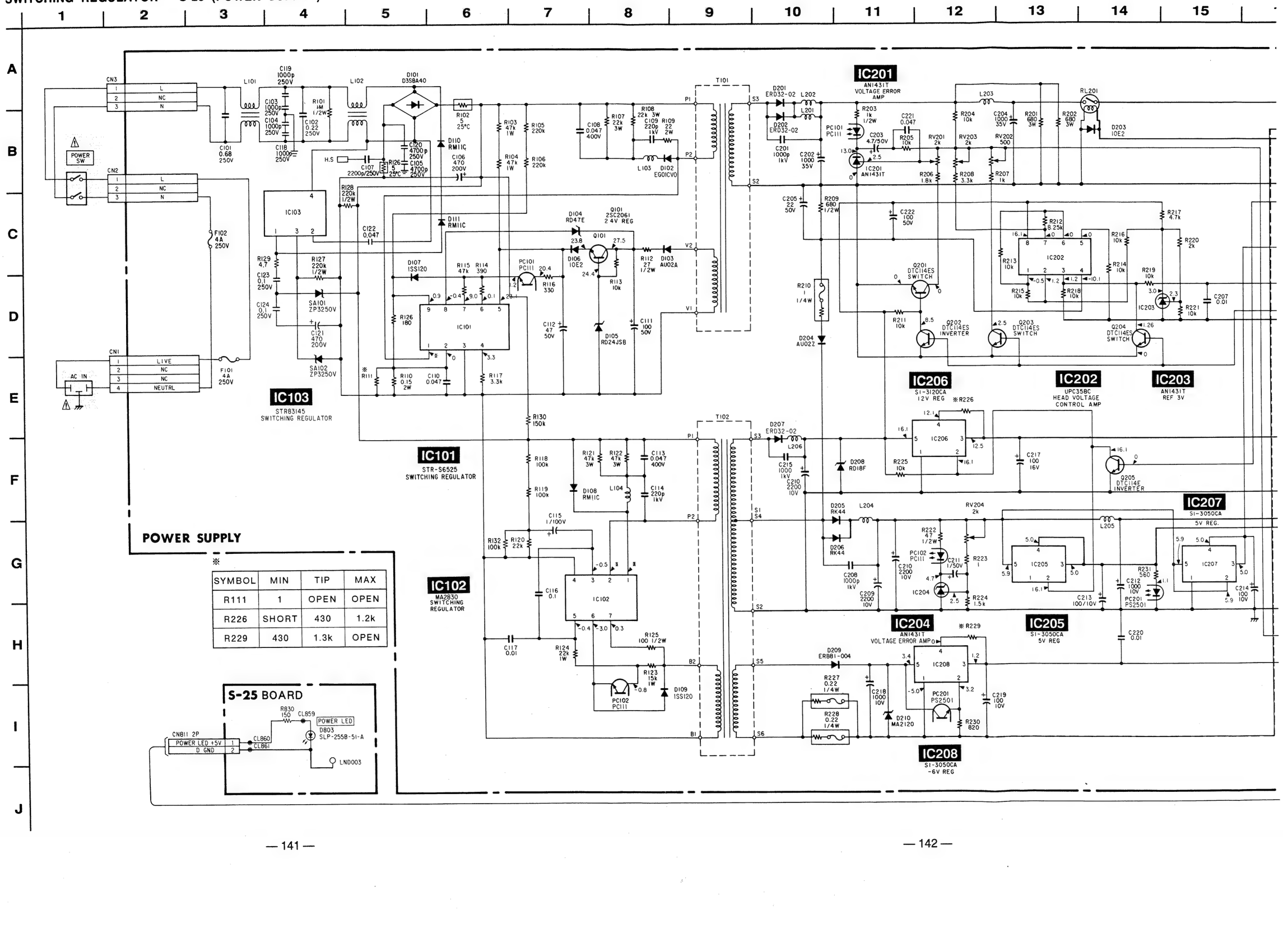
SWITCHING REGULATOR

CN1	A-2	L101	A-1
CN2	A-2	L102	B-1
CN3	B-2	L103	D-1
CN901	G-1	L104	D-1
CN902	G-1	L201	E-2
CN903	G-2	L202	E-2
CN904	G-2	L203	F-1
CN905	G-2	L204	E-1
CN906	G-2	L205	F-1
CN907	G-1	L206	E-1
D101	B-2	PC101	D-2
D102	D-2	PC102	E-1
D103	D-2	PC201	F-1
D104	D-2		
D105	D-2	Q101	D-2
D106	D-2	Q202	F-2
D107	D-2	Q202	F-2
D108	D-1	Q203	F-2
D109	D-1	Q204	G-2
D201	E-2	Q205	G-1
D202	E-2		
D203	F-2	RL201	F-2
D204	E-1		
D205	E-1	T101	E-2
D206	E-1	T102	E-1
D207	E-1		
D208	F-1	RV201	G-2
D209	E-1	RV202	F-1
D210	E-1	RV203	F-1
		RV204	E-1
F101			
IC101	C-2		
IC102	C-1		
IC201	F-2		
IC202	F-2		
IC203	F-2		
IC204	E-2		
IC205	F-1		
IC206	F-1		
IC207	F-1		
IC208	F-1		

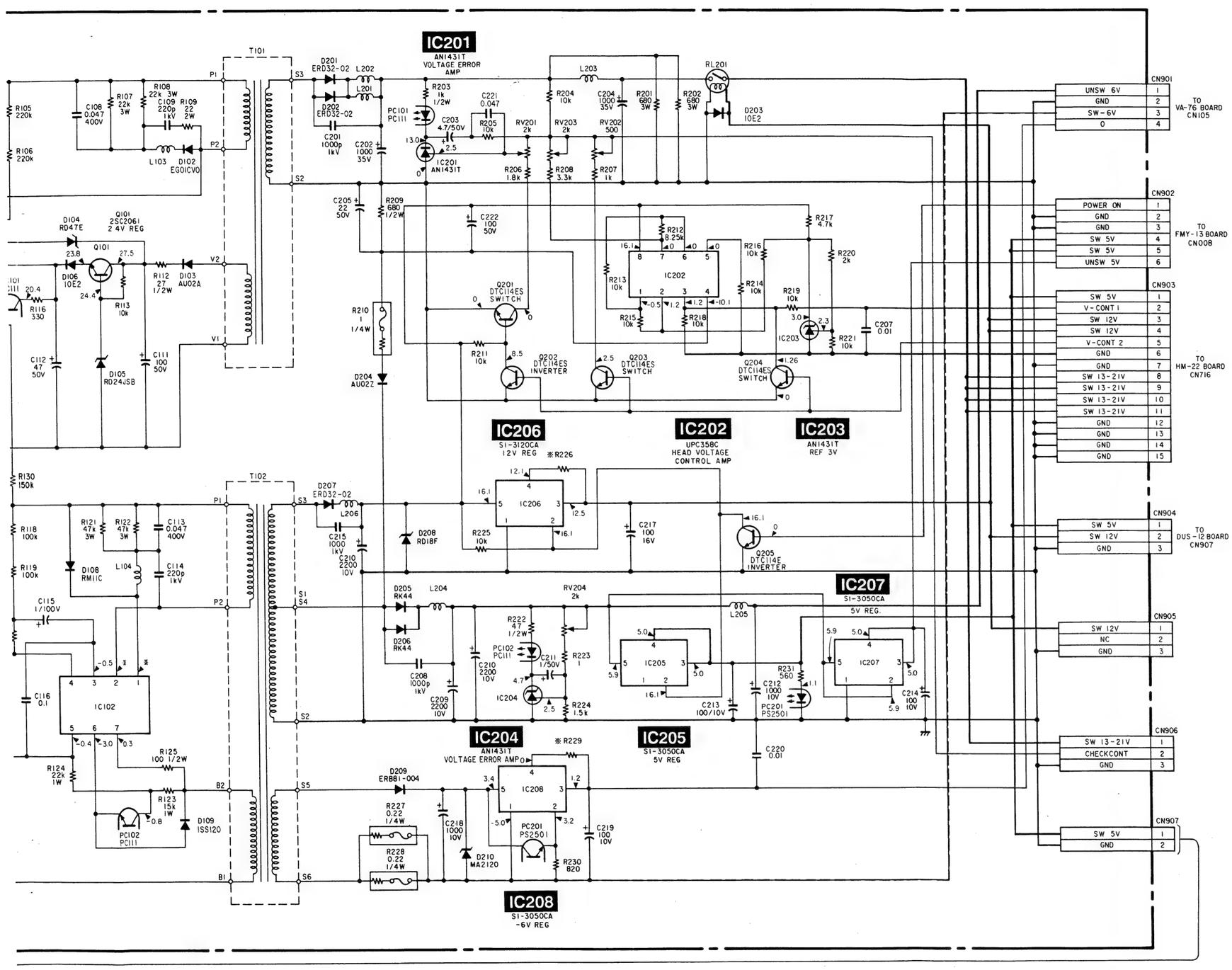


S-25 -SOLDERING SIDE-
1-650-849-15

SWITCHING REGULATOR S-25 (POWER SUPPLY)



7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19

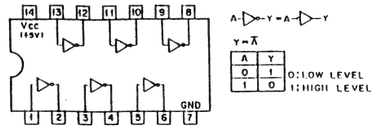


4-3. SEMICONDUCTORS

The chart in this section may sometimes show diodes, transistors, and ICs that are not interchangeable. When replacing a component, be sure to refer to the parts list. The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

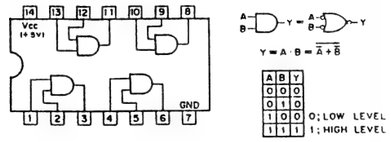
74F04SJ (NS) FLAT PACKAGE

TTL INVERTER
– TOP VIEW –



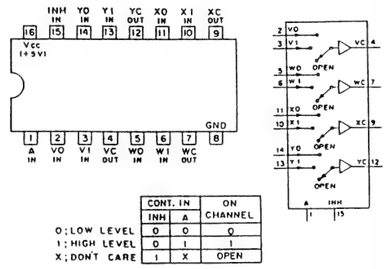
74F08SJ (NS) FLAT PACKAGE

TTL 2-INPUT POSITIVE-AND GATE
– TOP VIEW –



74F257ASJ (NS) FLAT PACKAGE

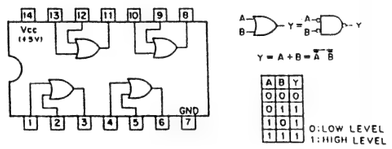
TTL 2-LINE-TO-1-LINE DATA SELECTOR/MULTIPLEXER
– TOP VIEW –



CONT. IN		ON CHANNEL
INH	A	
0	0	0
0	1	1
1	X	OPEN

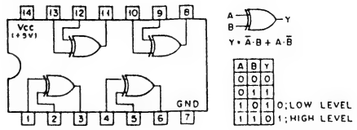
74F32SJ (NS) FLAT PACKAGE

TTL 2-INPUT POSITIVE OR GATE
– TOP VIEW –



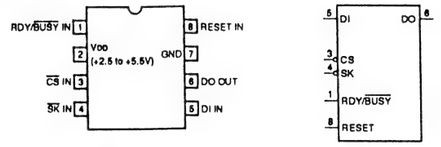
74F86SJ (NS) FLAT PACKAGE

TTL EXCLUSIVE OR GATE
– TOP VIEW –

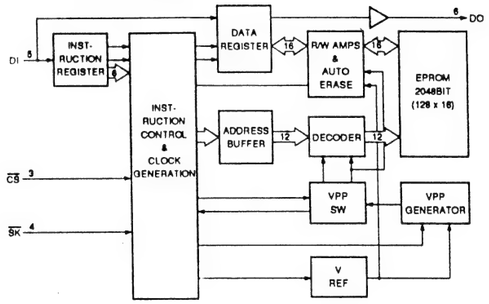


AK6420F (ASAHIKASEI ELECT) FLAT PACKAGE

C-MOS 2048 (128 x 16) · BIT ERASABLE MEMORY
·TOP VIEW·

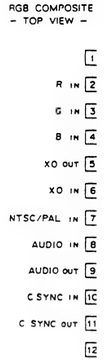


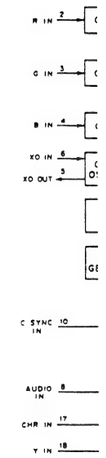
$\overline{CS}$; CHIP SELECT INPUT
DI ; SERIAL DATA INPUT
DO ; SERIAL DATA OUTPUT
RDY/$\overline{BUSY}$; READY/$\overline{BUSY}$ INPUT
RESET ; RESET INPUT
$\overline{SK}$; SERIAL DATA CLOCK INPUT



CXA1145M (S

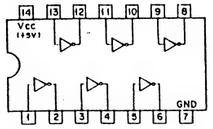
RGB COMPOSITE
– TOP VIEW –

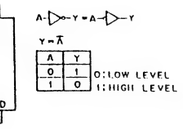




74F04SJ (NS) FLAT PACKAGE

TTL INVERTER
– TOP VIEW –



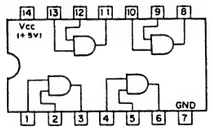


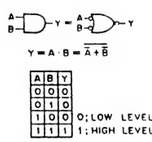
A	Y
0	1
1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

74F08SJ (NS) FLAT PACKAGE

TTL 2-INPUT POSITIVE-AND GATE
– TOP VIEW –



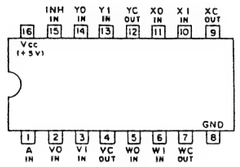


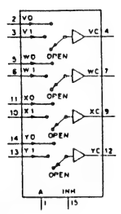
A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

0 ; LOW LEVEL
1 ; HIGH LEVEL

74F257ASJ (NS) FLAT PACKAGE

TTL 2-LINE-TO-1-LINE DATA SELECTOR/MULTIPLEXER
– TOP VIEW –



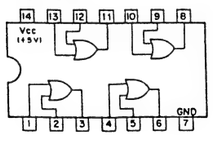


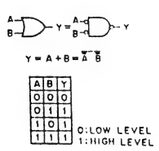
CONT. IN		ON
INH	A	CHANNEL
0	0	0
0	1	1
1	X	OPEN

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

74F32SJ (NS) FLAT PACKAGE

TTL 2-INPUT POSITIVE-OR GATE
– TOP VIEW –



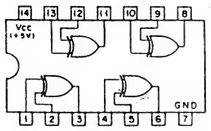


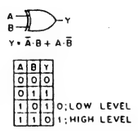
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

0 ; LOW LEVEL
1 ; HIGH LEVEL

74F86SJ (NS) FLAT PACKAGE

TTL EXCLUSIVE OR GATE
– TOP VIEW –



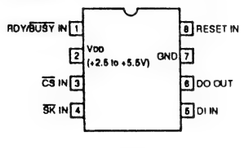


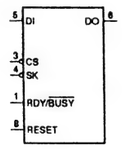
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

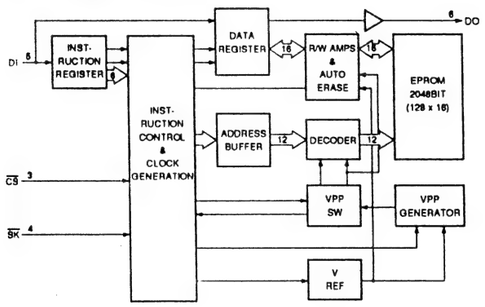
AK6420F (ASAHIKASEI ELECT) FLAT PACKAGE

C-MOS 2048 (128 x 16) - BIT ERASABLE MEMORY
·TOP VIEW·



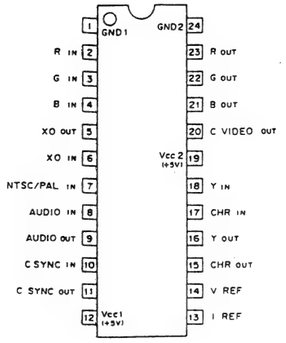


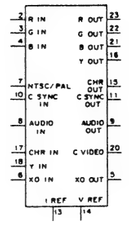
$\overline{CS}$	; CHIP SELECT INPUT
DI	; SERIAL DATA INPUT
DO	; SERIAL DATA OUTPUT
RDY/$\overline{BUSY}$	; READY/$\overline{BUSY}$ INPUT
RESET	; RESET INPUT
$\overline{SK}$	; SERIAL DATA CLOCK INPUT



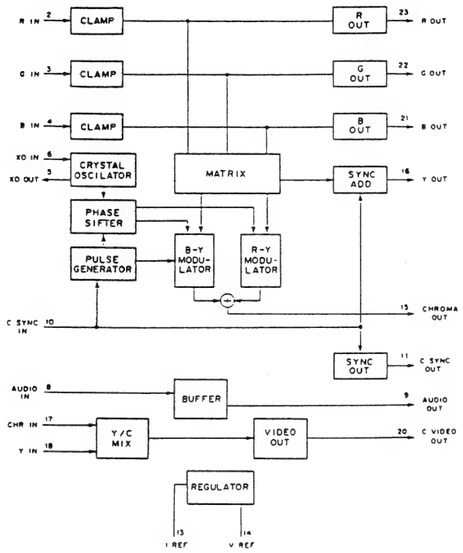
CXA1145M (SONY) FLAT PACKAGE

RGB COMPOSITE ENCODER
– TOP VIEW –



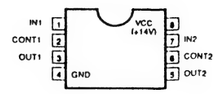


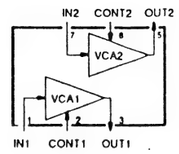
AUDIO	; AUDIO INPUT/OUTPUT
B	; BLUE OUTPUT
CHR	; CHROMA SIGNAL INPUT/OUTPUT
C SYNC	; CHROMA SYNC INPUT/OUTPUT
C VIDEO	; CHROMA VIDEO OUTPUT
G	; GREEN OUTPUT
I REF	; REFERENCE CURRENT
NTSC/PAL	; NTSC/PAL SELECT INPUT
R	; RED OUTPUT
V REF	; REFERENCE VOLTAGE
XO	; CRYSTAL OSCILLATOR INPUT/OUTPUT
Y	; Y-SIGNAL INPUT/OUTPUT



CXA1211M (SONY)
ELECTRONIC VOLUME

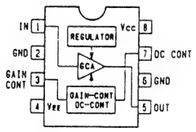
– TOP VIEW –





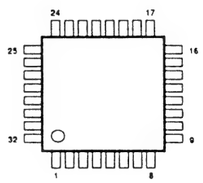
CXA1521M (SONY)

GAIN CONTROL AMP
– TOP VIEW –



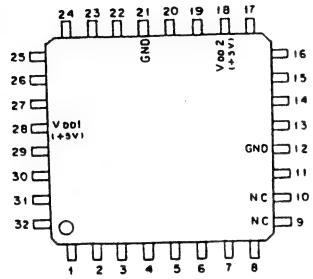
CXA1585Q (SONY)
C-MOS R.G.B DECODER

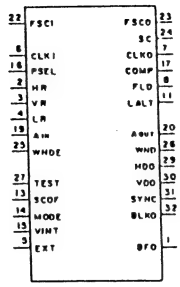
– TOP VIEW –



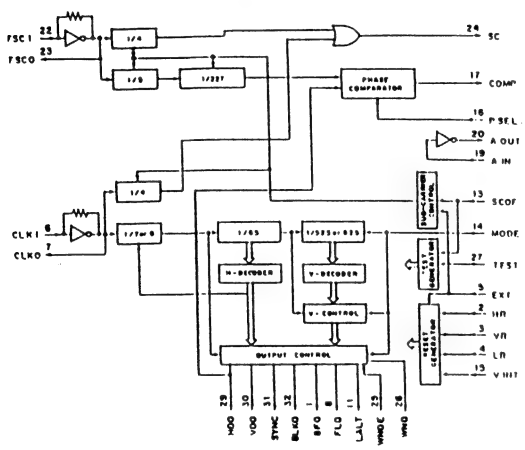
CXD1159Q (SONY)

C-MOS SYNC GENERATOR
– TOP VIEW –





PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	O	BFO	9	–	NC	17	O	COMP	25	I	WNDE
2	I	HR	10	–	NC	18	–	VDD2(+5V)	26	O	WND
3	I	VR	11	O	LALT	19	I	AIN	27	I	TEST
4	I	LR	12	–	GND	20	O	AOUT	28	–	VDD1(+5V)
5	I	EXT	13	I	SCOF	21	–	GND	29	O	HDO
6	I	CLKI	14	I	MODE	22	I	FSCI	30	O	VDO
7	O	CLKO	15	I	VINT	23	O	FSCO	31	O	SYNC
8	O	FLD	16	I	PSEL	24	O	SC	32	O	BLKO



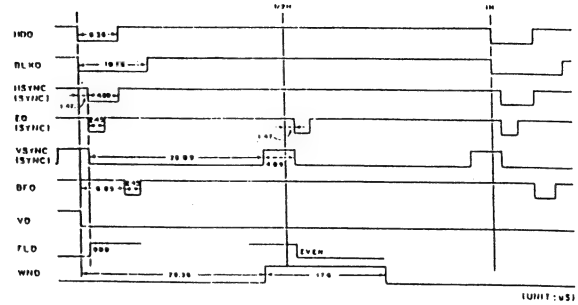
INPUT

AIN	; FILTER INVERTER INPUT
CLKI	; CLOCK INPUT (NTSC ; 14.31818MHz /PAL ; 14.1875MHz)
EXT	; INT/EXT (L ; INT)
FSCI	; 4FSC CLOCK INPUT
HR	; H RESET
LR	; LALT RESET
MODE	; NTSC/PAL (L ; NTSC)
PSEL	; POLARITY SELECT FOR PHASE COMP
SCOF	; SUBCARRIER OFF (L ; OFF)
TEST	; TEST INPUT
VINT	; INITIALIZE
VR	; V RESET
WNDE	; WINDOW ENABLE

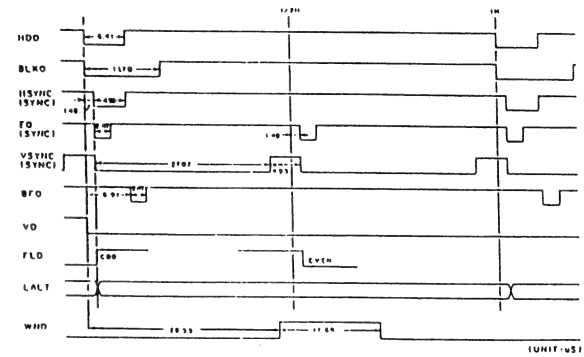
OUTPUT

AOUT	; FILTER INVERTER OUTPUT
BFO	; BURST FLAG PULSE
BLKO	; COMPOSITE BLANKING PULSE
CLKO	; CLOCK OUTPUT
COMP	; PHASE COMP
FLD	; FIELD PULSE
FSCO	; 4FSC CLOCK OUTPUT
HDO	; H DRIVE PULSE
LALT	; LINE ALTERNATE PULSE
SC	; SUBCARRIER
SYNC	; COMPOSITE SYNC PULSE
VDO	; V DRIVE PULSE
WND	; WINDOW

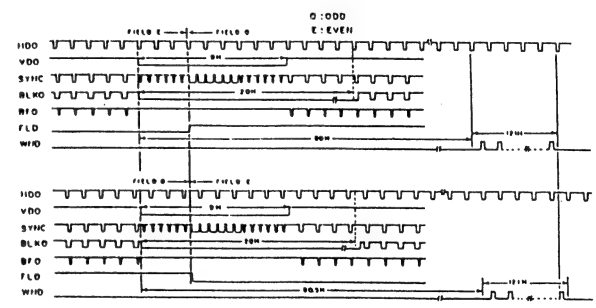
TIMING CHART H (NTSC)



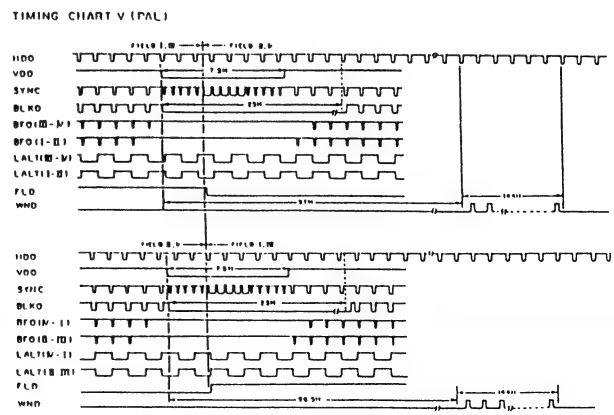
TIMING CHART H (PAL)



TIMING CHART V (NTSC)

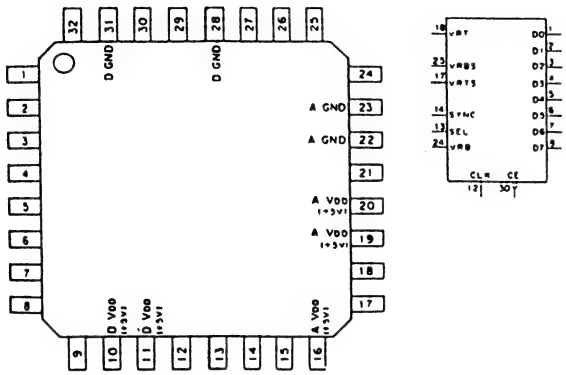


TIMING CHART V (PAL)

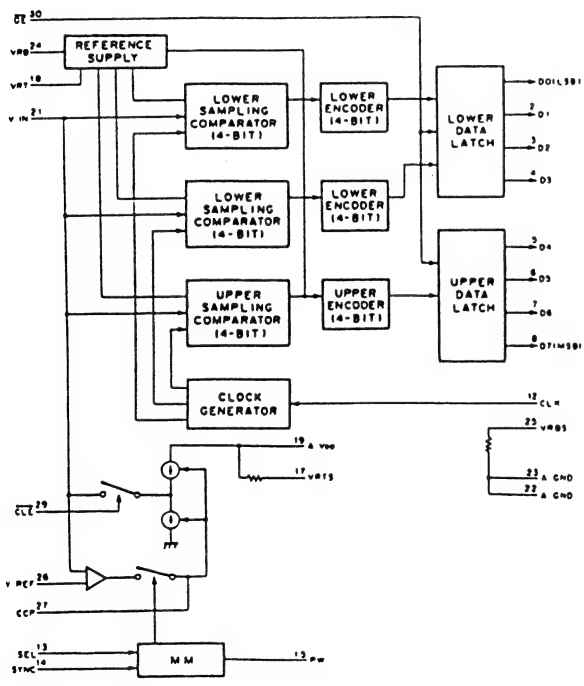


CXD1176Q (SONY)

C-MOS 8-BIT 20MSPS VIDEO A/D CONVERTER WITH CLAMP FUNCTION
– TOP VIEW –

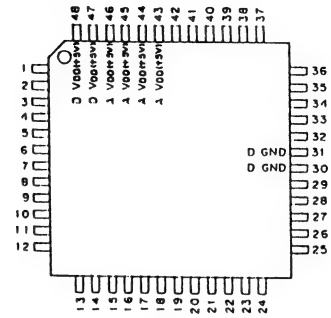


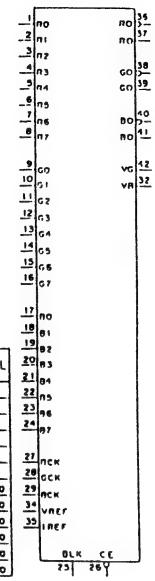
No.	I/O	SIGNAL	No.	I/O	SIGNAL	No.	I/O	SIGNAL	No.	I/O	SIGNAL
1	O	D0(LSB)	9	–	N.C.	17	O	VRTS	25	O	VRBS
2	O	D1	10	–	D VDD	18	O	VRT	26	I	VREF
3	O	D2	11	–	D VDD	19	–	A VDD	27	I/O	CCP
4	O	D3	12	I	CLK	20	–	A VDD	28	–	D GND
5	O	D4	13	I	SEL	21	I	V IN	29	I	CLE
6	O	D5	14	I	SYNC	22	–	A GND	30	O	OE
7	O	D6	15	I/O	PW	23	–	A GND	31	–	D GND
8	O	D7(MSB)	16	–	A VDD	24	O	VRB	32	–	N.C.



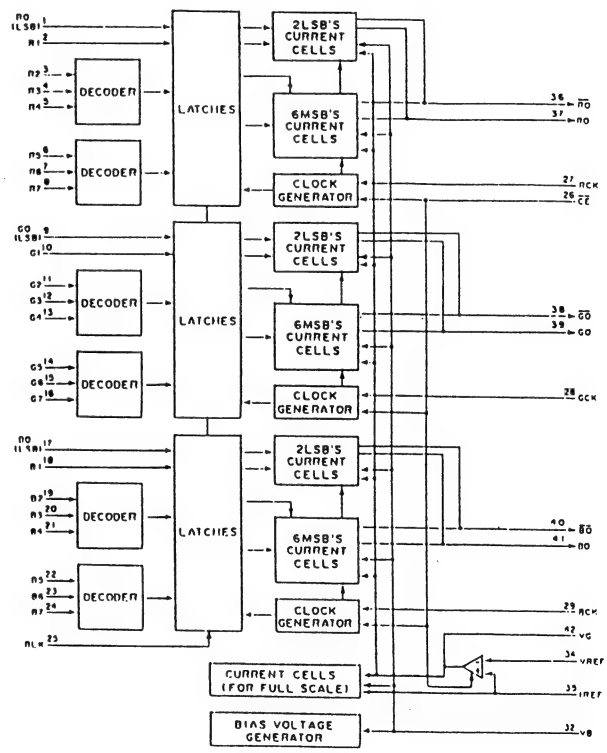
CXD1178Q (SONY) FLAT PACKAGE

C-MOS 3CH 8BIT 40MHz D/A CONVERTER
– TOP VIEW –

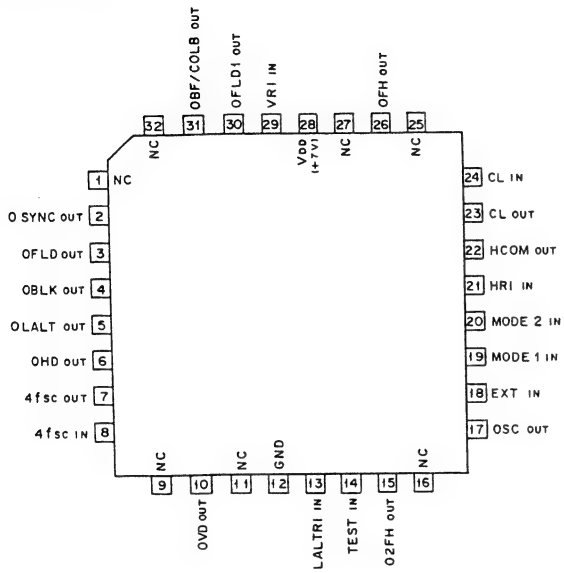


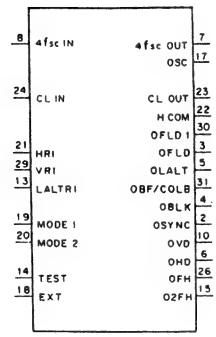


No.	I/O	SIGNAL	No.	I/O	SIGNAL	No.	I/O	SIGNAL	No.	I/O	SIGNAL
1	I	R0(LSB)	13	I	G4	25	I	BLK	37	O	R0
2	I	R1	14	I	G5	26	I	CE	38	O	G0
3	I	R2	15	I	G6	27	I	RCK	39	O	G0
4	I	R3	16	I	G7	28	I	GCK	40	O	B0
5	I	R4	17	I	B0(LSB)	29	I	BCK	41	O	B0
6	I	R5	18	I	B1	30	–	D GND	42	I	VG
7	I	R6	19	I	B2	31	–	D GND	43	–	A Vcc
8	I	R7	20	I	B3	32	I	VB	44	–	A Vcc
9	I	G0(LSB)	21	I	B4	33	–	A GND	45	–	A Vcc
10	I	G1	22	I	B5	34	I	VREF	46	–	A Vcc
11	I	G2	23	I	B6	35	I	IREF	47	–	A Vcc
12	I	G3	24	I	B7	36	O	R0	48	–	A Vcc



CXD1217Q (SONY) FLAT PACKAGE
C-MOS SYNC GENERATOR
– TOP VIEW –





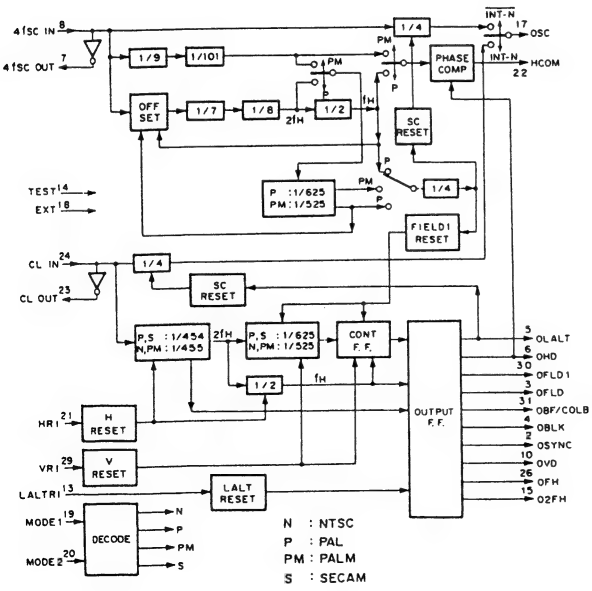
SYSTEM	4fsc	CLOCK
NTSC	$910f_H$	$910f_H$
PAL	$1135f_H + 2fv$	$908f_H$
PALM	$909f_H$	$910f_H$
SECAM	—	$908f_H$

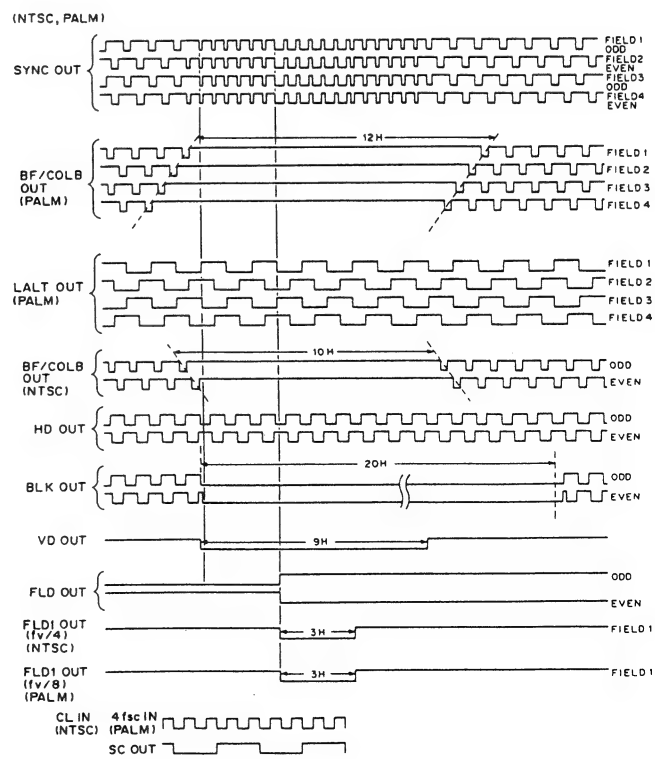
INPUT		SYSTEM
MODE1	MODE2	
0	0	NTSC
0	1	SECAM
1	0	PALM
1	1	PAL

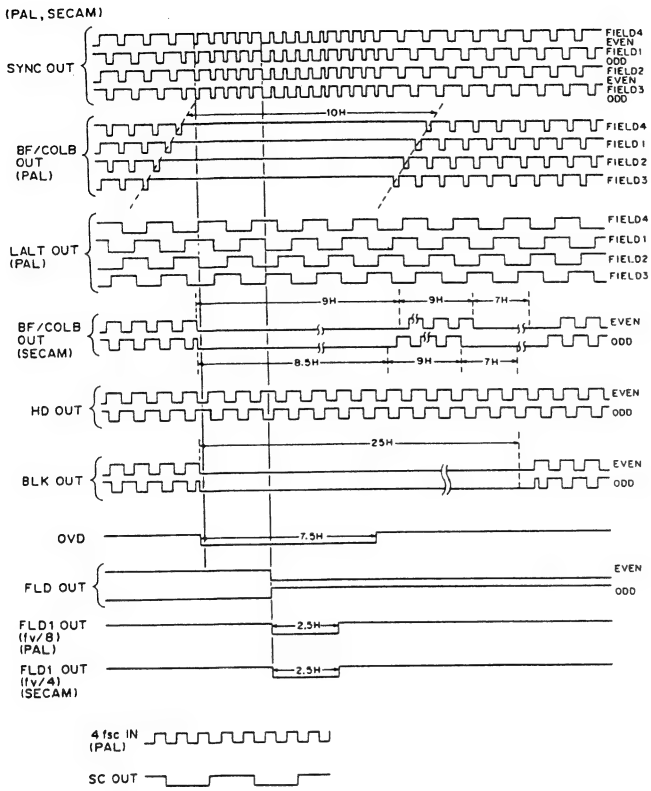
0 ; LOW LEVEL
1 ; HIGH LEVEL

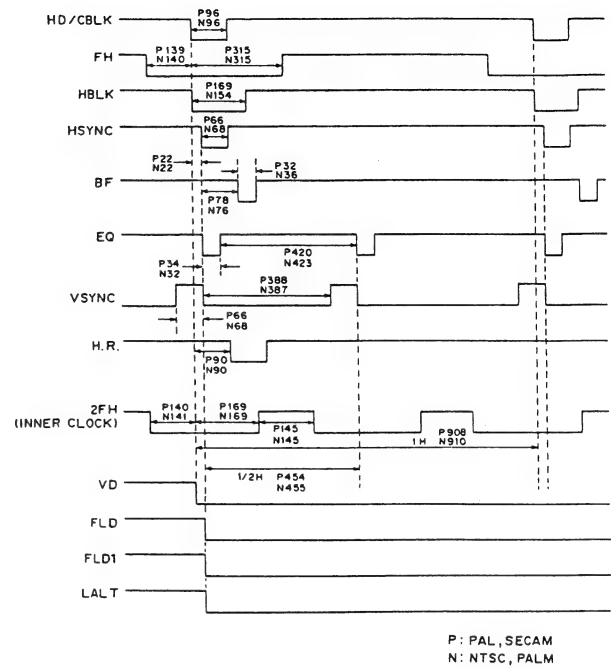
INPUT
4fsc IN : 4fsc
CL IN : CLOCK
EXT : SYNC MODE SELECT
(L : INTERNAL/H : EXTERNAL)
HRI : HORIZONTAL RESET
LALTRI : LINE ALTERNATE RESET
MODE1,2 : SYSTEM SELECT
VRI : VERTICAL RESET

OUTPUT
4fsc OUT : 4fsc
CL OUT : CLOCK
HCOM : PHASE COMPARATOR
O2FH : $2f_H$
OBF/COLB : BURST FLAG/COLOR BLANKING
OBLK : COMPOSITE BLANKING
OFH : f_H
OFLD : FIELD PULSE
OFLD1 : FIELD1
OHD : HORIZONTAL DRIVE
OLALT : LINE ALTERNATE
OSC : SUBCARRIER
OSYNC : COMPOSITE SYNC
OVD : VERTICAL DRIVE





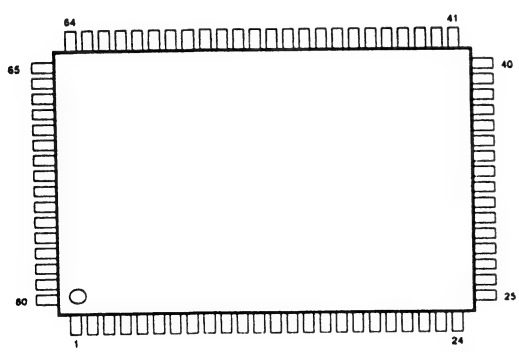


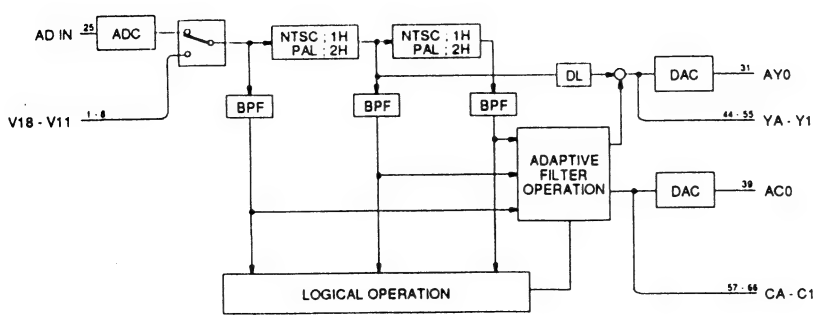


CXD2023Q (SONY)
CXD2024Q (SONY)

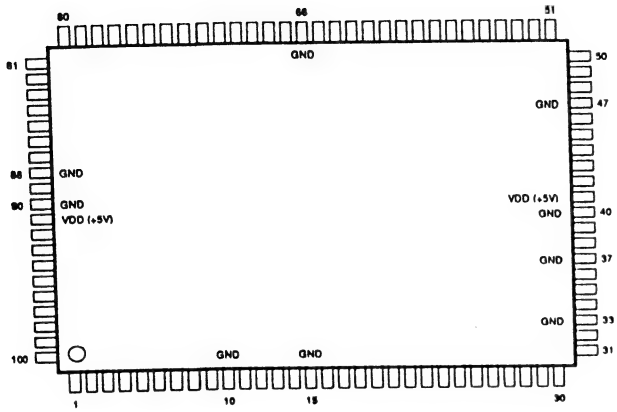
C-MOS DIGITAL COMB FILTER (NTSC/PAL)

— TOP VIEW —



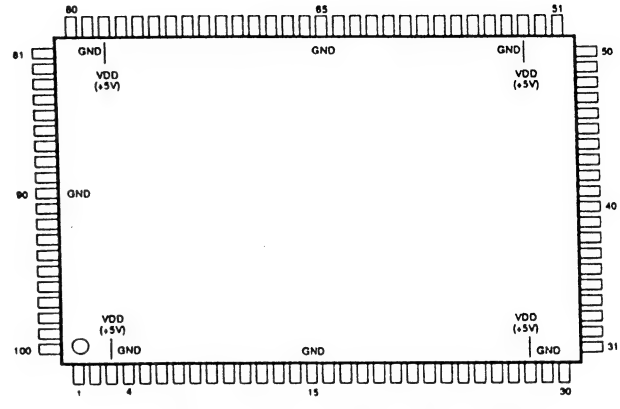


CXD8391Q (SONY)
C-MOS GATE ARRAY
— TOP VIEW —



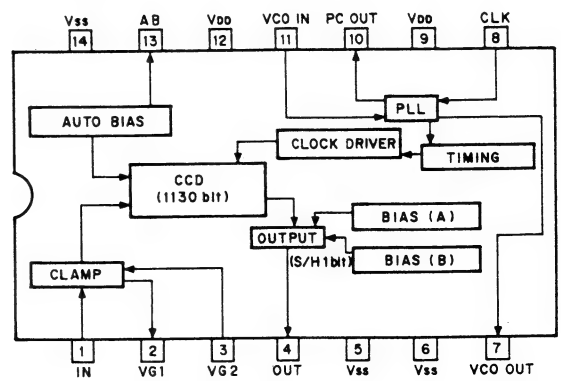
PIN No.	SIGNAL	PIN No.	SIGNAL	PIN No.	SIGNAL	PIN No.	SIGNAL
1	P47	26	P21	51	A20	76	D07
2	P46	27	P20	52	A19	77	D06
3	P45	28	P17	53	CS0	78	D05
4	P44	29	P16	54	CS1	79	D04
5	P43	30	P15	55	CS2	80	D03
6	P42	31	P14	56	A18	81	D02
7	P41	32	P13	57	A17	82	D01
8	P40	33	GND	58	A16	83	D00
9	WRP	34	RAS	59	A15	84	RES
10	GND	35	RC	60	A14	85	WR
11	P37	36	CAS	61	A13	86	DRQ2
12	P36	37	GND	62	A12	87	DRQ1
13	P35	38	DBRQ	63	A11	88	GND
14	P34	39	ABRQ	64	A10	89	CK
15	GND	40	GND	65	A09	90	GND
16	P33	41	VDD (+5V)	66	GND	91	VDD (+5V)
17	P32	42	PWR	67	A08	92	WRC
18	P31	43	BPWR	68	A07	93	P57
19	P30	44	P12	69	A06	94	P56
20	P27	45	P11	70	A05	95	P55
21	P26	46	P10	71	A04	96	P54
22	P25	47	GND	72	A03	97	P53
23	P24	48	A23	73	A02	98	P52
24	P23	49	A22	74	A01	99	P51
25	P22	50	A21	75	A00	100	P50

CXD8444Q (SONY)
C-MOS GATE ARRAY
— TOP VIEW —



PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	TRIM	26	O	RO2	51	O	BO2	76	I	ADON
2	I	CAPEN	27	O	RO3	52	O	BO3	77	O	ADOE
3	-	VDD (+5V)	28	-	VDD (+5V)	53	-	VDD (+5V)	78	-	VDD (+5V)
4	-	VSS	29	-	VSS	54	-	VSS	79	-	VSS
5	I/O	DBUS7	30	O	RO4	55	O	BO4	80	I	CLR
6	I/O	DBUS6	31	O	RO5	56	O	BO5	81	-	N.C
7	I/O	DBUS5	32	O	RO6	57	O	BO6	82	I/O	GBUS6
8	I/O	DBUS4	33	O	RO7	58	O	BO7	83	I/O	GBUS7
9	I/O	DBUS3	34	I	Y3A	59	I/O	BBUS0	84	I/O	RBUS0
10	I/O	DBUS2	35	I	Y3B	60	I/O	BBUS1	85	I/O	RBUS1
11	I/O	DBUS1	36	O	GO0	61	I/O	BBUS2	86	I	BXW
12	I/O	DBUS0	37	O	GO1	62	I/O	BBUS3	87	I	CLKA
13	O	XWRPD	38	O	GO2	63	O	ACK	88	I	OE1
14	O	WRPD	39	O	GO3	64	O	SO	89	I	CLK
15	-	VSS	40	-	VSS	65	-	VSS	90	-	VSS
16	O	BLK	41	O	GO4	66	I/O	BBUS4	91	O	STDCLK
17	I	STD	42	O	GO5	67	I/O	BBUS5	92	I	OE2
18	I	CLKSEL	43	O	GO6	68	I/O	BBUS6	93	I	CLKB
19	I	DAON	44	O	GO7	69	I/O	BBUS7	94	I	OE3
20	I	WRP	45	I	SCK	70	I/O	GBUS0	95	I/O	RBUS2
21	I	COLA	46	I	VD	71	I/O	GBUS1	96	I/O	RBUS3
22	I	COLB	47	I	SI	72	I/O	GBUS2	97	I/O	RBUS4
23	I	POFF	48	I	CS	73	I/O	GBUS3	98	I/O	RBUS5
24	O	RO0	49	O	BO0	74	I/O	GBUS4	99	I/O	RBUS6
25	O	RO1	50	O	BO1	75	I/O	GBUS5	100	I/O	RBUS7

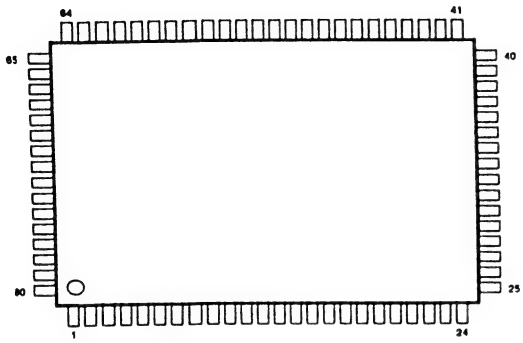
CXL5505M (SONY)
CMOS-CCD 1H DELAY LINE
— TOP VIEW —



CXP80P116Q-1
CXP80P116Q-1-236
CXP80P116Q-1-UP1800E

C-MOS 8-BIT MICRO PROCESSING UNIT

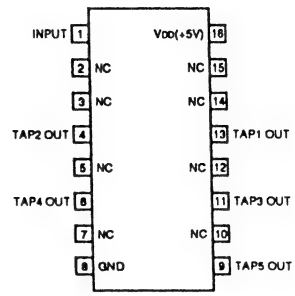
— TOP VIEW —

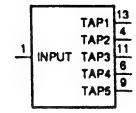


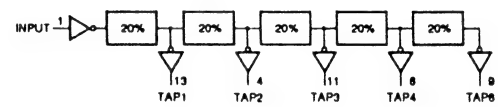
DS1000S-75 (DALLAS SEMICONDUCTOR)(DELAY TIME=75 nS)

C-MOS DELAY LINE

-TOP VIEW-





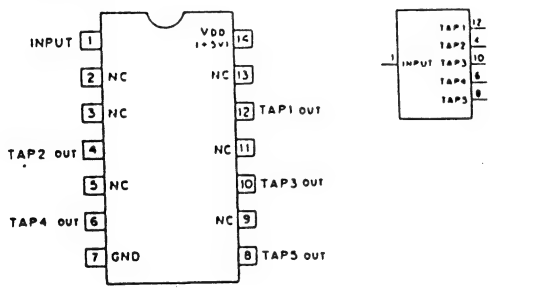


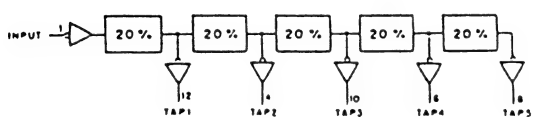
DELAY TIME (nS)				
TAP1	TAP2	TAP3	TAP4	TAP5
15	30	45	60	75

DS1000S-50 (DALLAS SEMICONDUCTOR)(DELAY TIME=50 nS)

C-MOS DELAY LINE

— TOP VIEW —

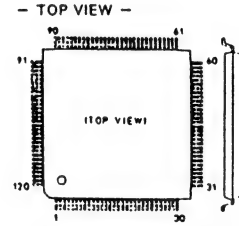




TYPE. NO.	DELAY TIME (ns)				
	TAP1	TAP2	TAP3	TAP4	TAP5
DS1000-50	10	20	30	40	50
DS1000-60	12	24	36	48	60
DS1000-75	15	30	45	60	75
DS1000-100	20	40	60	80	100
DS1000-125	25	50	75	100	125
DS1000-150	30	60	90	120	150
DS1000-175	35	70	105	140	175
DS1000-200	40	80	120	160	200
DS1000-250	50	100	150	200	250
DS1000-500	100	200	300	400	500

HDC443V2 (HITACHI)

— TOP VIEW —

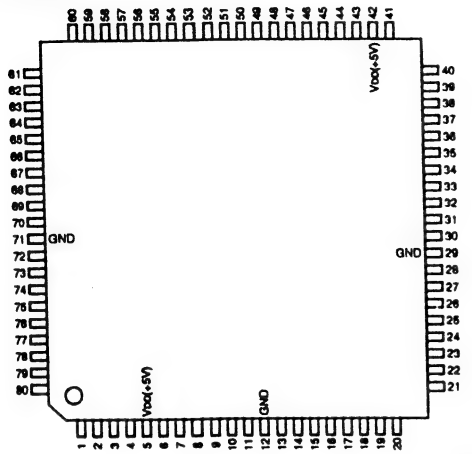


No.	I/O	Name	No.	I/O	Name	No.	I/O	Name	No.	I/O	Name
1	-	VDD	31	-	GND	61	-	VDD	91	-	GND
2	O	DTT0	32	O	DTE	62	I/O	DAA	92	I	WR
3	O	DTT1	33	I	DCK	63	I/O	DA9	93	I	DDD0
4	O	DTT2	34	I	TMGP	64	I/O	DA8	94	I	DDD1
5	O	DTT3	35	I	PRIN	65	O	CHOO	95	I	DDD2
6	O	DTT4	36	I	PRNS	66	O	AFOO	96	I	DDD3
7	O	DTT5	37	I	RESE	67	O	AAAB	97	I	DDD4
8	O	DTT6	38	I	LI7	68	O	ABBB	98	I	DDD5
9	O	DTT7	39	I	LI6	69	I	TSA	99	I	DDD6
10	O	DTT8	40	I	LI5	70	I	TSB	100	I	DDD7
11	O	DTT9	41	I	LI4	71	I	RWA	101	I	A0A
12	O	DTTA	42	I	LI3	72	I	RWB	102	I	A1A
13	I	TI07	43	I	LI2	73	I	RWC	103	I	A2A
14	O	TO04	44	I	LI1	74	I	LG	104	I	A3A
15	-	GND	45	I	LI0	75	-	GND	105	I	CS2
16	O	HDC	46	I/O	DA7	76	I/O	AD0	106	I	CS1
17	O	STOB	47	I/O	DA6	77	I/O	AD1	107	I	CS0
18	O	DATA	48	I/O	DA5	78	I/O	AD2	108	O	TO02
19	O	DATB	49	I/O	DA4	79	I/O	AD3	109	I	TI03
20	O	DRV	50	I/O	DA3	80	I/O	AD4	110	I	TI04
21	I	TI08	51	I/O	DA2	81	I/O	AD5	111	O	TO03
22	O	TO05	52	I/O	DA1	82	I/O	AD6	112	I	TI05
23	O	TO01	53	I/O	DA0	83	I/O	AD7	113	I	TI06
24	I	TI01	54	I/O	DAF	84	I/O	AD8	114	I	TSNR
25	I	TI02	55	I/O	DAE	85	I/O	AD9	115	I	TWEB
26	O	TO06	56	I/O	DAD	86	I/O	ADA	116	I	TTOE
27	I	TI10	57	I/O	DAC	87	O	OPTW	117	I	TTCS
28	I	TI11	58	I/O	DAB	88	O	OPTO	118	I	CLOK
29	I	TI09	59	I	IOEN	89	I	OLD	119	O	OSO
30	-	VDD	60	-	GND	90	-	VDD	120	-	GND

HD6475328F-FMY10-01 (HITACHI) FLAT PACKAGE
HD6475368F-FMY13-01 (HITACHI) FLAT PACKAGE

C-MOS MICRO COMPUTER UNIT

-TOP VIEW-



(VDD = +5V)

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I/O	P21/R/W	21	I/O	P40/A0	41	I/O	P63/A19	61	I/O	P90/FTOA2
2	I/O	P22/DS	22	I/O	P41/A1	42	—	VDD	62	I/O	P91/FTOA3
3	I/O	P23/RD	23	I/O	P42/A2	43	I/O	P70/TMC1	63	I/O	P92/PW1
4	I/O	P24/WR	24	I/O	P43/A3	44	I/O	P71/FTI1	64	I/O	P93/PW2
5	—	VDD	25	I/O	P44/A4	45	I/O	P72/FTI2	65	I/O	P94/PW3
6	I	MD0	26	I/O	P45/A5	46	I/O	P73/FTI3/TMRI	66	I/O	P95/TXD
7	I	MD1	27	I/O	P46/A6	47	I/O	P74/FTOB1/FTCI1	67	I/O	P96/RXD
8	I	MD2	28	I/O	P47/A7	48	I/O	P75/FTOB2/FTCI2	68	I/O	P97/SCK
9	I	STBY	29	—	GND	49	I/O	P76/FTOB3/FTCI3	69	I	EXTAL
10	I	RES	30	I/O	P50/A8	50	I/O	P77/FTOA1	70	I	XTAL
11	I	NMI	31	I/O	P51/A9	51	I	AGND	71	—	GND
12	—	GND	32	I/O	P52/A10	52	I	P60/AN0	72	I/O	P10/ϕ
13	I/O	P30/D0	33	I/O	P53/A11	53	I	P61/AN1	73	I/O	P11/E
14	I/O	P31/D1	34	I/O	P54/A12	54	I	P62/AN2	74	I/O	P12/BACK
15	I/O	P32/D2	35	I/O	P55/A13	55	I	P63/AN3	75	I/O	P13/BREQ
16	I/O	P33/D3	36	I/O	P56/A14	56	I	P64/AN4	76	I/O	P14/WAIT
17	I/O	P34/D4	37	I/O	P57/A15	57	I	P65/AN5	77	I/O	P15/IRQ0
18	I/O	P35/D5	38	I/O	P60/A16	58	I	P66/AN6	78	I/O	P16/IRQ1
19	I/O	P36/D6	39	I/O	P61/A17	59	I	P67/AN7	79	I/O	P17/TMO
20	I/O	P37/D7	40	I/O	P62/A18	60	I	AVDD	80	I/O	P20/AS

INPUT

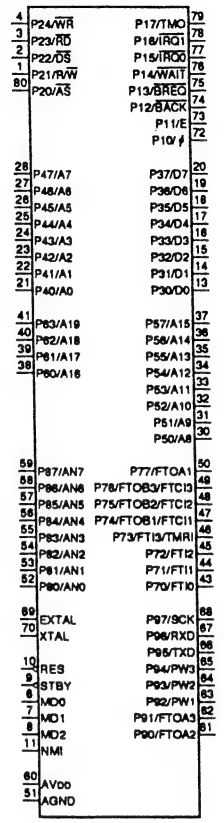
AGND	;	GND FOR A/D CONVERTER
AN0-AN7	;	ANALOG
AVDD	;	REFERENCE VOLTAGE FOR A/D CONVERTER
BREQ	;	BAS REQUEST
EXTAL	;	CRYSTAL OSCILLATOR & EXTERNAL CLOCK (ϕ CLOCK x 2)
FTCI1-FTCI3	;	FRT COUNTER CLOCK
FTI1-FTI3	;	FRT INPUT CAPTURE
IRQ0,IRQ1	;	INTERRUPT REQUEST
MD0-MD2	;	MODE SETTING
NMI	;	NON-MASKABLE INTERRUPT
P60-P67	;	PORT 6
RES	;	RESET
RXD	;	RECEIVE DATA
STBY	;	STANDBY
TMCI	;	8-BIT TIMER CLOCK
TMRI	;	8-BIT TIMER COUNTER RESET
WAIT	;	WAIT
XTAL	;	CRYSTAL OSCILLATOR (ϕ CLOCK x 2)

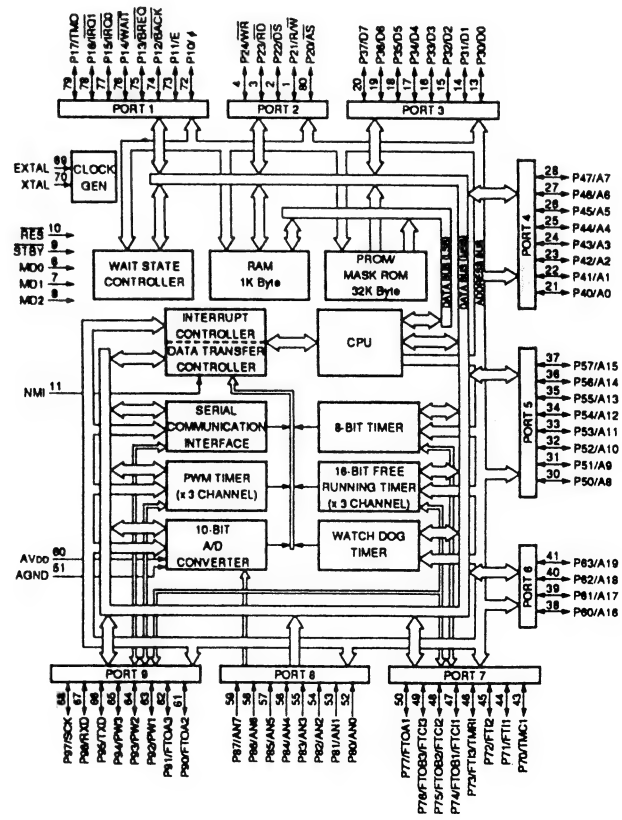
OUTPUT

ϕ	;	SYSTEM CLOCK
A0-A19	;	ADDRESS BUS
AS	;	ADDRESS STROBE
BACK	;	BAS REQUEST ACKNOWLEDGE
DS	;	DATA STROBE
E	;	ENABLE CLOCK
FTOA1-FTOA3	;	FRT OUTPUT COMPEA A
FTOB1-FTOB3	;	FRT OUTPUT COMPEA B
PW1-PW3	;	PWM TIME
RD	;	READ
R/W	;	READ/WRITE
TMO	;	8-BIT TIMER
TXD	;	TRANSCEIVE DATA
WR	;	WRITE

INPUT/OUTPUT

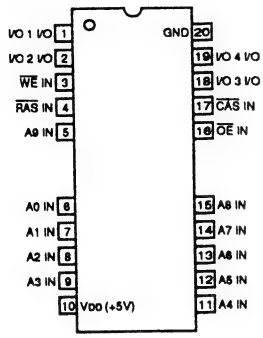
D0-D7	;	DATA BUS
P10-P17	;	PORT 1
P20-P24	;	PORT 2
P30-P37	;	PORT 3
P40-P47	;	PORT 4
P50-P57	;	PORT 5
P60-P63	;	PORT 6
P70-P77	;	PORT 7
P90-P97	;	PORT 9
SCK	;	SERIAL CLOCK

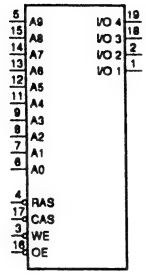




HM51L240AS7 (HITACHI)

C-MOS 2M (524,288 x 4) -BIT DYNAMIC RAM
-TOP VIEW-

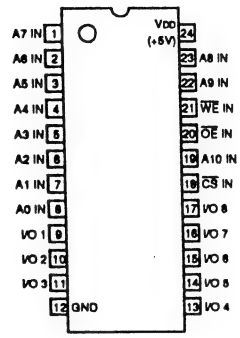


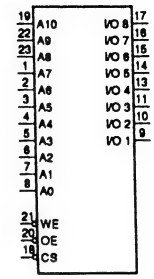


A0-A9 ; ADDRESS INPUTS
$\overline{CAS}$; COLUMN ADRESS STROBE INPUT
I/O 1-I/O 4 ; DATA INPUTS/OUTPUTS
$\overline{OE}$; OUTPUT ENABLE INPUT
$\overline{RAS}$; ROW ADDRESS STROBE INPUT
$\overline{WE}$; WRITE ENABLE INPUT

IDT6116SA25S0 (IDT) FLAT PACKAGE

C-MOS 16K (2K x 8) - BIT STATIC RAM
-TOP VIEW-





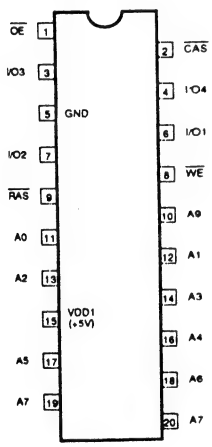
A0-A10 ; ADDRESS INPUTS
$\overline{CS}$; CHIP SELECT INPUT
I/O1-I/O8 ; DATA INPUTS/OUTPUTS
$\overline{OE}$; OUTPUT ENABLE INPUT
$\overline{WE}$; WRITE ENABLE INPUT

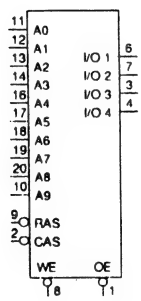
MODE	$\overline{CS}$	$\overline{OE}$	$\overline{WE}$	I/O
STANDBY	1	X	X	HI-Z
READ	0	0	1	DATA OUT
READ	0	1	1	HI-Z
WRITE	0	X	0	DATA IN

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
HI-Z ; HIGH IMPEDANCE

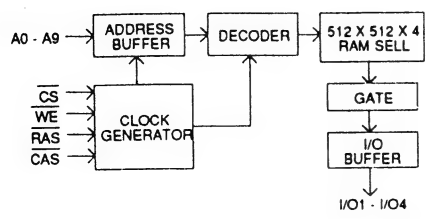
HM514400AS7GS-EL (HITACHI)

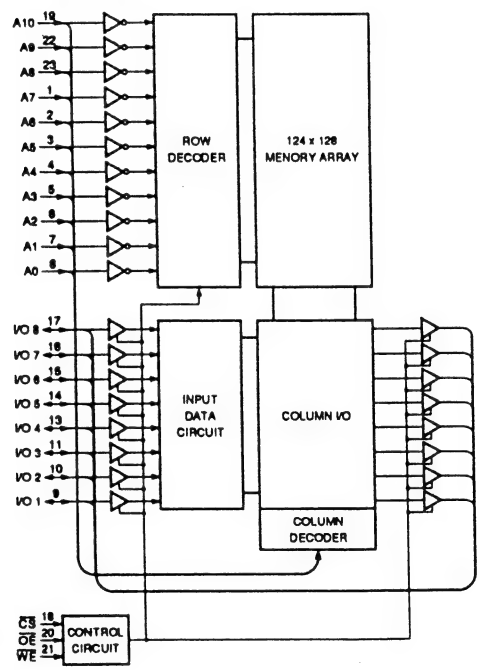
C-MOS 4 BIT DYNAMIC RAM
– TOP VIEW –





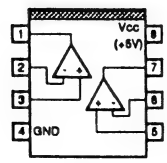
A0 - A9 ; ADDRESS INPUT
CAS ; COLUMN ADDRESS STROBE
I/O 1 - I/O 4 ; DATA INPUT/OUTPUT
RAS ; ROW ADDRES STROBE
OE ; OUTPUT ENABLE INPUT
WE ; WRITE ENABLE INPUT





LM358D (TI) FLAT PACKAGE

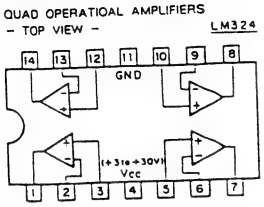
OPERATIONAL AMPLIFIERS
-TOP VIEW-



LM324D (TI)

QUAD OPERATIOAL AMPLIFIERS

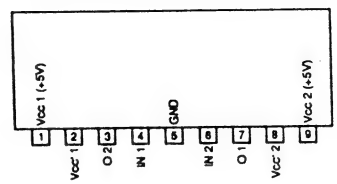
– TOP VIEW –

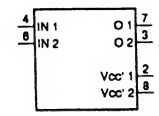


M54544AL (MITSUBISHI)

BI-DIRECTIONAL MOTOR DRIVER WITH THERMAL SHUT DOWN FUNOTION

-PRINTED SIDE VIEW-





Vcc' 1,Vcc' 2 ; POWER SOURCE OUTPUT

INPUT		OUTPUT		FUNCTION
IN 1	IN 2	O 1	O 2	
0	0	"OFF" STATE	"OFF" STATE	IC PASSIVITY
1	0	1	0	POSITIVE ROTATING
0	1	0	1	NEGATIVE ROTATING
1	1	0	0	BRAKE

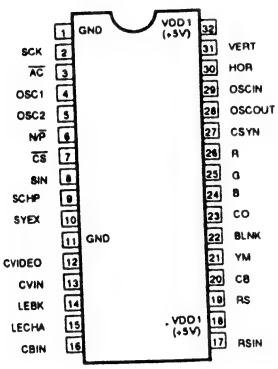
0 ; LOW LEVEL

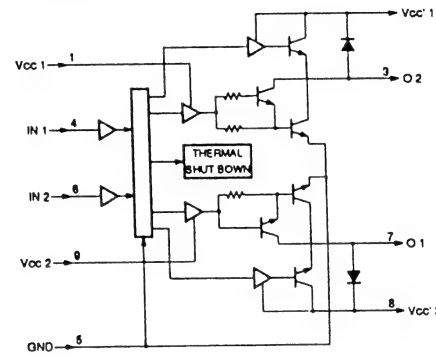
1 ; HIGH LEVEL

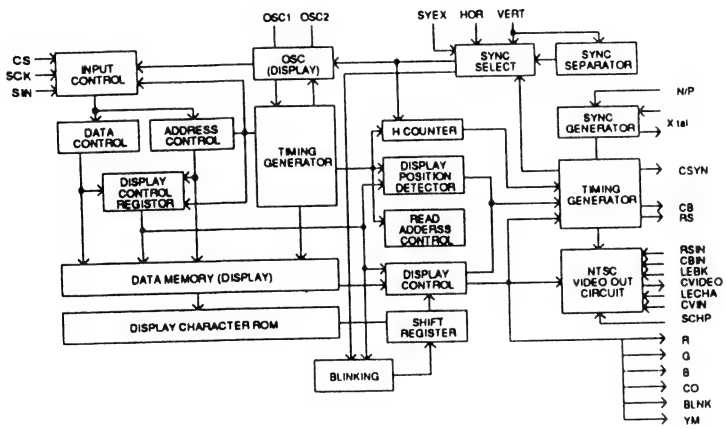
M50555-218FP

C-MOS TV DISPLAY CONTROLLER

– TOP VIEW –







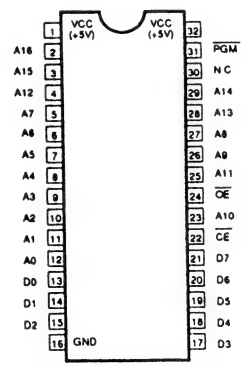
M5M27C101FP-UP12G-E2

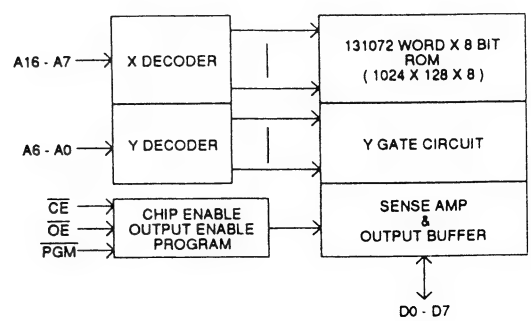
M5M27C101FP-UP12M-E2

M5M27C101FP-UP12S-E2

C-MOS ONE TIME PROGRAMMABLE ROM

– TOP VIEW –

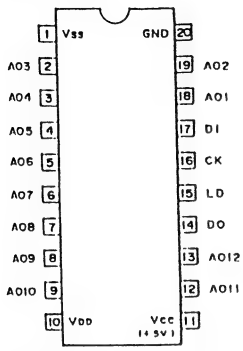


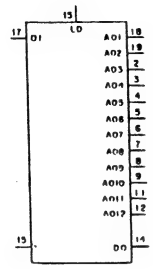


M62352GP (MITSUBISHI) FLAT PACKAGE

C-MOS 8-BIT×12 CHANNEL D/A CONVERTER
(WITH BUFFER OPERATIONAL AMPLIFIER)

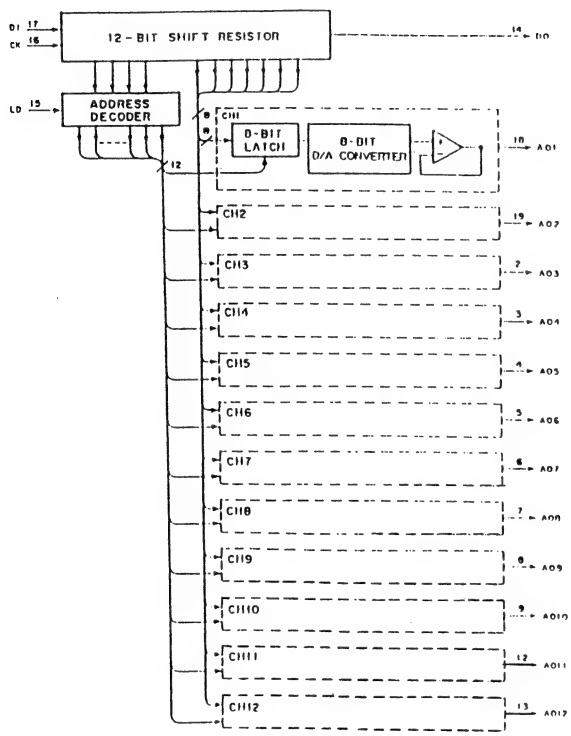
– TOP VIEW –





A01 – A012 ; 8 BIT D/A OUTPUT
CK ; CLOCK INPUT
DI ; SERIAL DATA INPUT
DO ; DATA OUTPUT

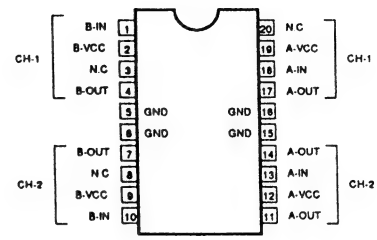
NOTE :
3.5V < VDD < Vcc
– 3.5V < Vss < Vcc

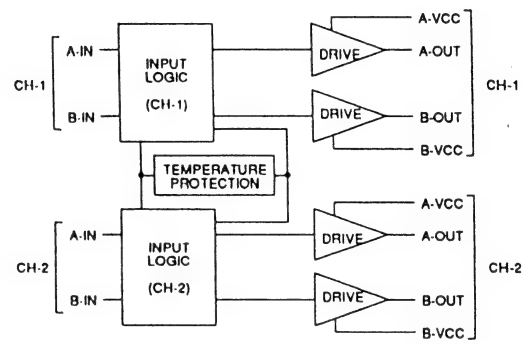


MB3863PF-G-BND

DUAL MODE MOTOR DRIVER

– TOP VIEW –

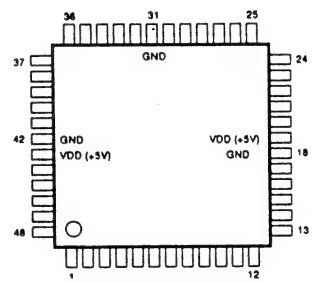




MB621948

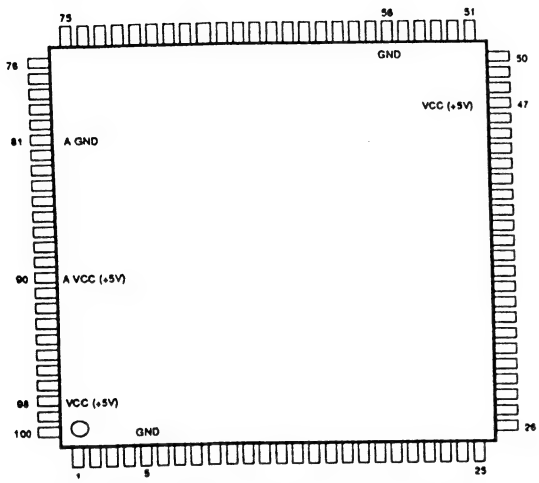
C-MOS GATE ARRAY

– TOP VIEW –



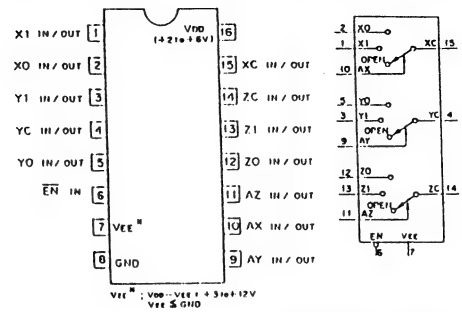
PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	CBLANK	13	I	SYNC2	25	O	HPWO	37	I	NANDI2
2	I	HD	14	I	SYDL0	26	O	HPWON	38	O	NANDO
3	I	VD	15	I	SYDL1	27	O	WIN	39	I	VDSEL
4	I	SYNC1	16	I	SYDL2	28	O	WINN	40	I	INTVD
5	I	CLK	17	I	SYDL3	29	O	CP	41	I	EXTVD
6	-	GND	18	-	GND	30	O	CPON	42	-	GND
7	I	NTSCPAL	19	-	VDD (+5V)	31	-	GND	43	-	VDD (+5V)
8	I	RESET	20	I	BLDL0	32	O	DLBLKO	44	O	VSELOUT
9	I	HPPD0	21	I	BLDL1	33	O	DLBLON	45	I	DLSEL0
10	I	HPPD1	22	I	BLDL2	34	O	DLSYO	46	I	DLSEL1
11	I	HPPD2	23	I	BLDL3	35	O	DLSYON	47	I	THDL
12	I	HPPD3	24	I	TEST	36	I	NANDI1	48	I	TESTHPWO

MB89093PFV-G-124-BND
C-MOS 8 BIT MICROCOMPUTER
— TOP VIEW —



PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	I	MOD0	26	I/O	CMOD	51	O	SEG12	76	I/O	P83/SO1
2	I	MOD1	27	I/O	P24/SI0	52	O	SEG11	77	I/O	P84/SCK1
3	I	X0	28	I/O	P25/SO0	53	O	SEG10	78	I/O	P85/ECK
4	O	X1	29	I/O	P26/SCK0	54	O	SEG09	79	I/O	P86/T01
5	-	VSS	30	I/O	P27/RMCI	55	O	SEG08	80	I/O	P87/T02
6	I	XRST	31	I/O	P30/SEG31	56	-	VSS	81	-	A VSS
7	I/O	P00/E120	32	I/O	P31/SEG30	57	O	SEG07	82	I/O	P90/AN00
8	I/O	P01/E121	33	I/O	P32/SEG29	58	O	SEG06	83	I/O	P91/AN01
9	I/O	P02/E122	34	I/O	P33/SEG28	59	O	SEG05	84	I/O	P92/AN02
10	I/O	P03/E123	35	I/O	P34/SEG27	60	O	SEG04	85	I/O	P93/AN03
11	I/O	P04/E124	36	I/O	P35/SEG26	61	O	SEG03	86	I/O	P94/AN04
12	I/O	P05/E125	37	I/O	P36/SEG25	62	O	SEG02	87	I/O	P95/AN05
13	I/O	P06/E126	38	I/O	P37/SEG24	63	O	SEG01	88	I/O	P96/AN06
14	I/O	P07/E127	39	I/O	P40/SEG23	64	O	SEG00	89	I/O	P97/AN07
15	I/O	P10/E110	40	I/O	P41/SEG22	65	I	V3	90	-	VCC (+5V)
16	I/O	P11/E111	41	I/O	P42/SEG21	66	I	V2	91	I/O	PA0/AN08
17	I/O	P12/E112	42	I/O	P43/SEG20	67	I	V1	92	I/O	PA1/AN09
18	I/O	P13/E113	43	I/O	P44/SEG19	68	I	V0	93	I/O	PA2/AN10
19	I/O	P14	44	I/O	P45/SEG18	69	O	COM0	94	I/O	PA3/AN11
20	I/O	P15	45	I/O	P46/SEG17	70	O	COM1	95	I/O	PA4/LSI
21	I/O	P16	46	I/O	P47/SEG16	71	O	COM2	96	I/O	PA5/LSO
22	I/O	P17	47	-	VCC (+5V)	72	O	COM3	97	I/O	PA6/COUT
23	I/O	P20	48	O	SEG15	73	I/O	P80/STB	98	-	VCC (+5V)
24	I/O	P21	49	O	SEG14	74	I/O	P81/XCS	99	O	CL1
25	I/O	P22	50	O	SEG13	75	I/O	P82/SI1	100	I	CL0

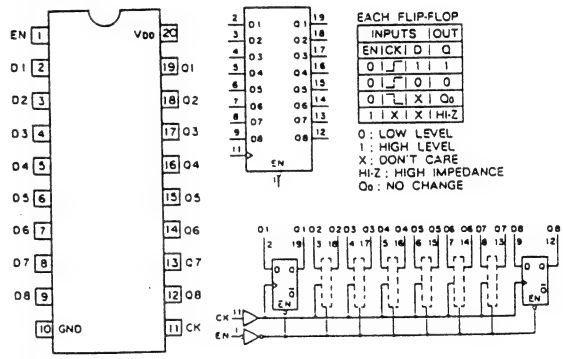
MC74HC4053F (MOTOROLA) FLAT PACKAGE
CMOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER
— TOP VIEW —



CONT. INPUTS		ON
EN	A (X,Y,Z)	CHANNEL
0	0	0
0	1	1
1	X	OPEN

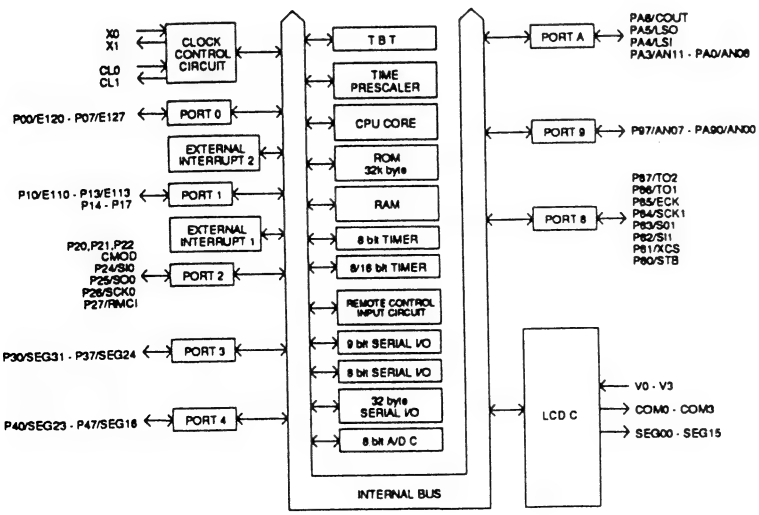
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

MC74HC574AF (MOTOROLA) FLAT PACKAGE
— TOP VIEW —



NOTE

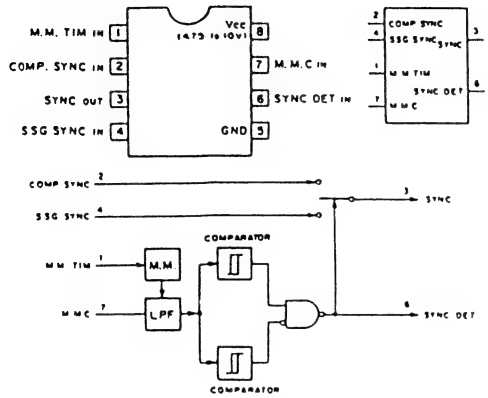
TYPE	Vcc
74AC/74HC	+ 2 to + 6V
74ACT/74FCT /74HCT	+ 5V
TC74ACS74F TC74VHC574	+ 2 to + 5.5V



NJM2230M (JRC) FLAT PACKAGE

VIDEO SIGNAL DETECTOR

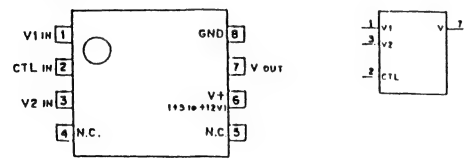
– TOP VIEW –

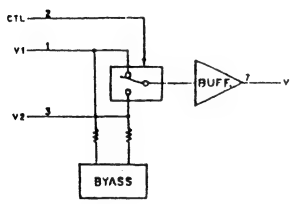


NJM2233BM (JRC) FLAT PACKAGE

2-INPUT SIGNAL VIDEO SWITCH

– TOP VIEW –





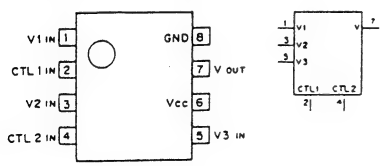
CTL	V
0	V1
1	V2

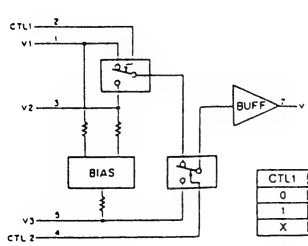
0 : LOW LEVEL
1 : HIGH LEVEL

NJM2234M (JRC) FLAT PACKAGE

3-INPUT VIDEO SIGNAL SWITCH

– TOP VIEW –





CTL1	CTL2	V
0	0	V1
1	0	V2
X	1	V3

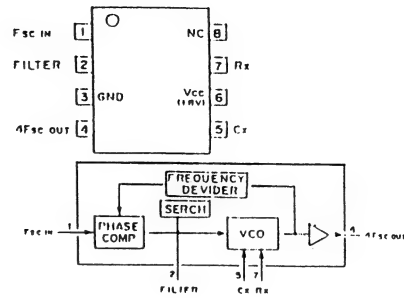
0 LOW LEVEL
1 HIGH LEVEL
X DON'T CARE

TYPE	GAIN	Vcc
NJM2234M	0 dB	+5 to +12V
NJM2245M	+6 dB	+8.5 to +13V

NJM2240M (JRC) FLAT PACKAGE

4-TIMES OSCILLATOR

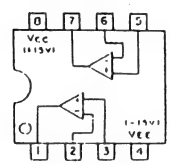
– TOP VIEW –



NJM4560M (JRC) FLAT PACKAGE

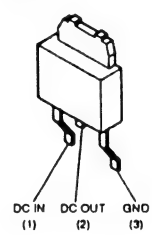
DUAL OPERATIONAL AMPLIFIER

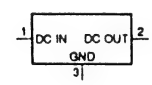
– TOP VIEW –



PQ05SZ1U (SHARP)

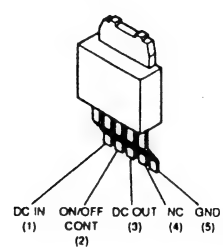
SERIES REGURATOR

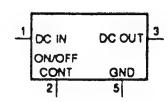




PQ05TZ1U (SHARP)

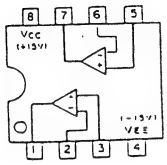
SERIES REGURATOR





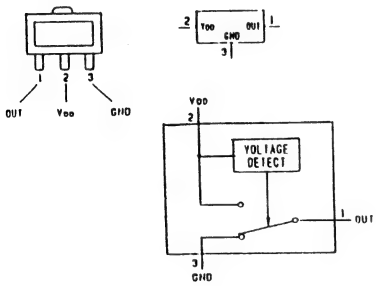
RC4558PS (TI) FLAT PACKAGE

DUAL OPERATIONAL AMPLIFIER
– TOP VIEW –



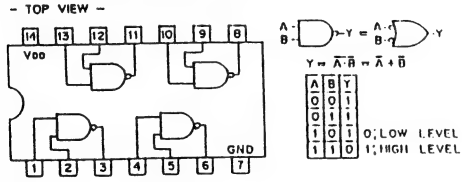
S-8054ALB-LM-S (SEKIO I AND E) 4.00-4.30V

C-MOS VOLTAGE DETECTOR
– TOP VIEW –



SN74HC00ANS (TI) FLAT PACKAGE

C-MOS QUAD 2-INPUT NAND GATE
– TOP VIEW –



A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

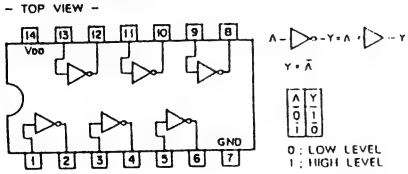
0 ; LOW LEVEL
1 ; HIGH LEVEL

NOTE :

TYPE	VDD
TC74AC00P TC74AC00F	+2 to +5.5V
MC74HCT00N	+5V
74ACT00PC	
OTHER TYPES	+2 to +6V

SN74HC04ANS (TI) FLAT PACKAGE

C-MOS HEX INVERTERS
– TOP VIEW –



A	Y
0	1
1	0

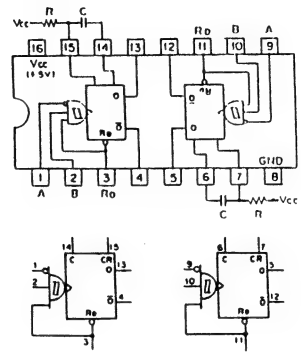
0 ; LOW LEVEL
1 ; HIGH LEVEL

NOTE :

TYPE	VDD
74HCT04 TYPE	+5V
74VHC TC74AC04 TYPE	+2 to +5.5V
74ACT04 TYPE	+4.5 to +5.5V
OTHER TYPES	+2 to +6V

SN74LS221NS (TI) FLAT PACKAGE

TTL MONOSTABLE MULTIVIBRATOR WITH SCHMITT TRIGGER INPUT
– TOP VIEW –



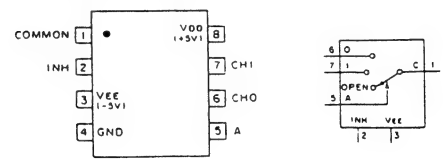
INPUTS			OUTPUTS	
RD	A	B	Q	Q̄
0	X	X	0	1
X	1	X	0	1
X	X	0	0	1
1	0	↓	⊓	⊔
1	↓	1	⊓	⊔
↑	0	1	⊓	⊔

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

OUTPUT PULSE WIDTH = 0.7CR

TC4W53F (TOSHIBA) FLAT PACKAGE

C-MOS 2-CHANNEL MULTIPLEXER/DEMULTIPLEXER
– TOP VIEW –

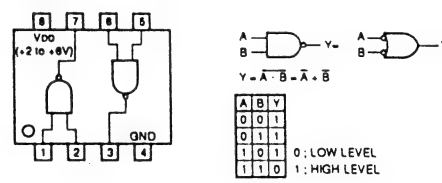


CONT. INPUT		ON CHANNEL
INH.	A	
0	0	0
0	1	1
1	X	OPEN

0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE

TC7W00F (TOSHIBA) FLAT PACKAGE

C-MOS DUAL 2-INPUT NAND GATE
-TOP VIEW-

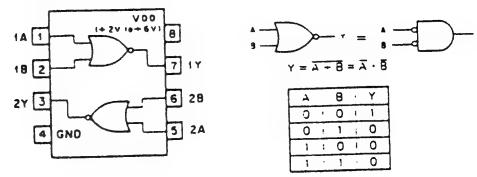


A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

TC7W02F (TOSHIBA) FLAT PACKAGE

C-MOS DUAL 2-INPUT NOR GATE
– TOP VIEW –

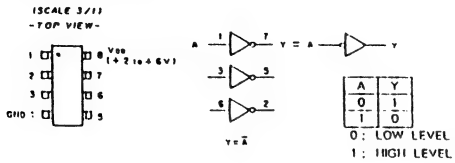


A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

TC7WU04F (TOSHIBA) CHIP PACKAGE

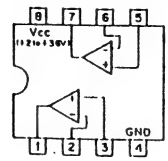
C-MOS HEX INVERTERS



UPC393G2 (NEC) FLAT PACKAGE

DUAL VOLTAGE COMPARATORS

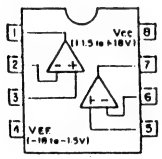
- TOP VIEW -



TL082CPS (TI) FLAT PACKAGE

OPERATIONAL AMPLIFIER
(JFET INPUT)

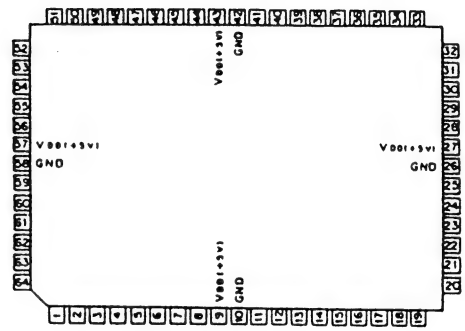
- TOP VIEW -



UPD65006GF-250-3B8 (NEC)

C-MOS

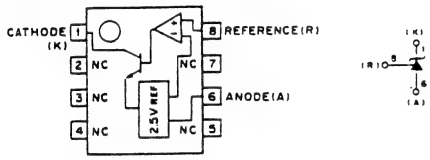
— TOP VIEW —



PIN NO	PIN NAME	PIN NO.	PIN NAME	PIN NO.	PIN NAME	PIN NO.	PIN NAME
1		17	P8	33		49	INT VD
2		18	P9	34		50	
3	WEWD HDL	19	P10	35	HDL7	51	
4	SWD HDL	20	CAS1	36	HDL6	52	INT HD
5	SWD VD	21	CAS2	37	HDL5	53	INT SYNC
6	VBLK	22	CUP	38	HDL4	54	SWD HD
7	P0	23	VBLK	39	HDL3	55	WDW SYNC
8	P1	24	$\overline{AEN}$	40	HDL2	56	SIG DET
9	VDD	25	IN/$\overline{M}$	41	HDL1	57	VDD
10	GND	26	GND	42	GND	58	GND
11	P2	27	VDD	43	VDD	59	HD
12	P3	28	HD RET	44	D/A CK	60	SYNC
13	P4	29	HD OUT	45	$\overline{RAS}$	61	VD
14	P5	30	RES	46	CK	62	$\overline{SYNC}$ IN
15	P6	31	HDL9	47	EXT D/A	63	SPD/$\overline{SPS}$
16	P7	32	HDL8	48	INT D/A	64	IN/$\overline{WEWD}$

TL431CM (TI) FLAT PACKAGE

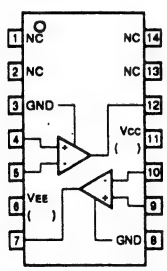
PROGRAMMABLE SHUNT REGULATOR DIODE



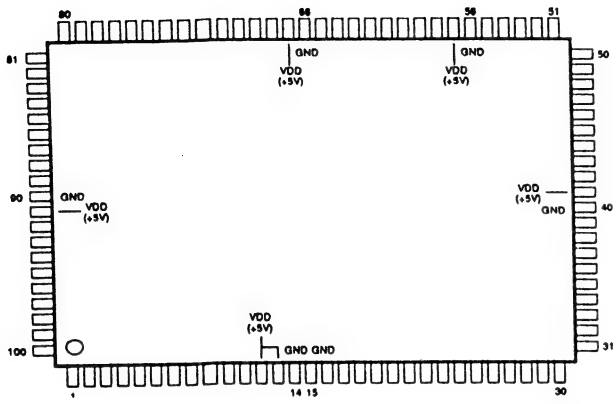
UPC319G2 (NEC) FLAT PACKAGE

DUAL VOLTAGE COMPARATOR

-TOP VIEW-

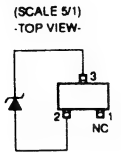


UPD65013GF-407-3BA
C-MOS GATE ARRAY
— TOP VIEW —



PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1		CS1O	26		CAS2	51		A0	76		G2BE
2		CS0O	27		CAS1	52		A1	77		G1AE
3		MFY3	28		CAS0	53		A2	78		G1BE
4		MY3	29		RAS9	54		A3	79		G1AW
5		MY2	30		RAS8	55		A4	80		G1BW
6		MY1	31		RAS7	56		GND	81		R2AW
7		MY0	32		RAS6	57		VDD (+5V)	82		R2BW
8		Y3	33		RAS5	58		A5	83		R2AE
9		Y2	34		RAS4	59		A6	84		R2BE
10		Y1	35		RAS3	60		A7	85		R1AE
11		Y0	36		RAS2	61		A8	86		R1BE
12		VDD (+5V)	37		RAS1	62		A9	87		R1AW
13		VDD (+5V)	38		RAS0	63		B2BW	88		R1BW
14		GND	39		CAS5	64		B2AE	89		INMB
15		GND	40		GND	65		B2AW	90		GND
16		CS2B	41		VDD (+5V)	66		GND	91		VDD (+5V)
17		CRB	42		CAS6	67		VDD (+5V)	92		AEN
18		CS1B	43		CAS7	68		B2BE	93		HBL
19		BCBB	44		CAS8	69		B1AE	94		VBL
20		BCGB	45		ABRB	70		B1BE	95		CUP
21		BCRB	46		CAS9	71		B1AW	96		CRY
22		MBRW	47		CS0	72		B1BW	97		CS4
23		FTHB	48		CS1	73		G2AW	98		CS4O
24		CAS4	49		CS2	74		G2BW	99		CS3O
25		CAS3	50		CS3	75		G2AE	100		CS2O

02CZ2.0



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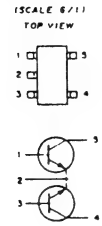
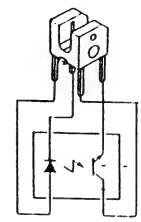


GP1S23



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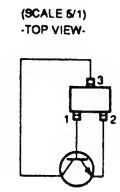

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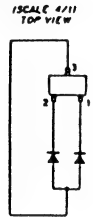
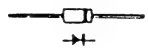


10E-2



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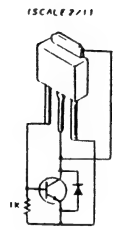

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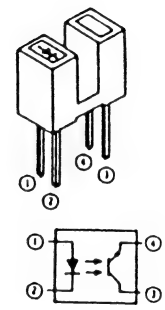
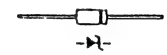


RD9.1EW



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1SS302
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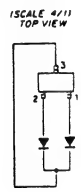
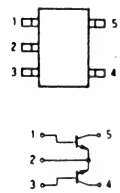
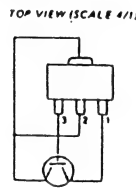


2SA1618



2SD999-CLCK



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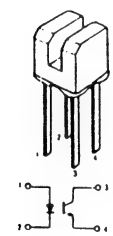
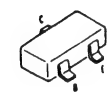


RN1302-TE85L



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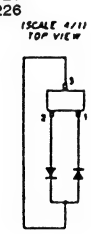

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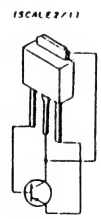

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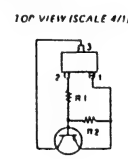
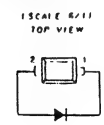


MA8027-L



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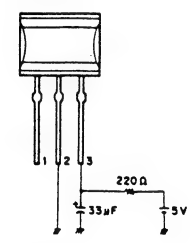

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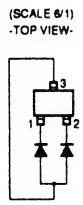

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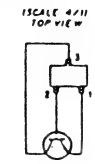

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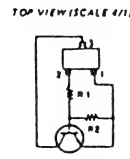
DTC124EK
DTC144EK



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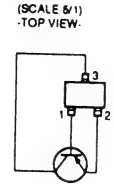

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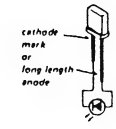

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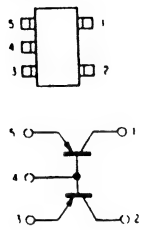
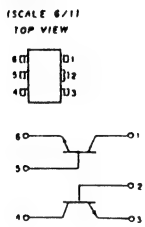
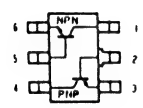


XN4501



XN4601



SECTION 5
EXPLODED VIEWS

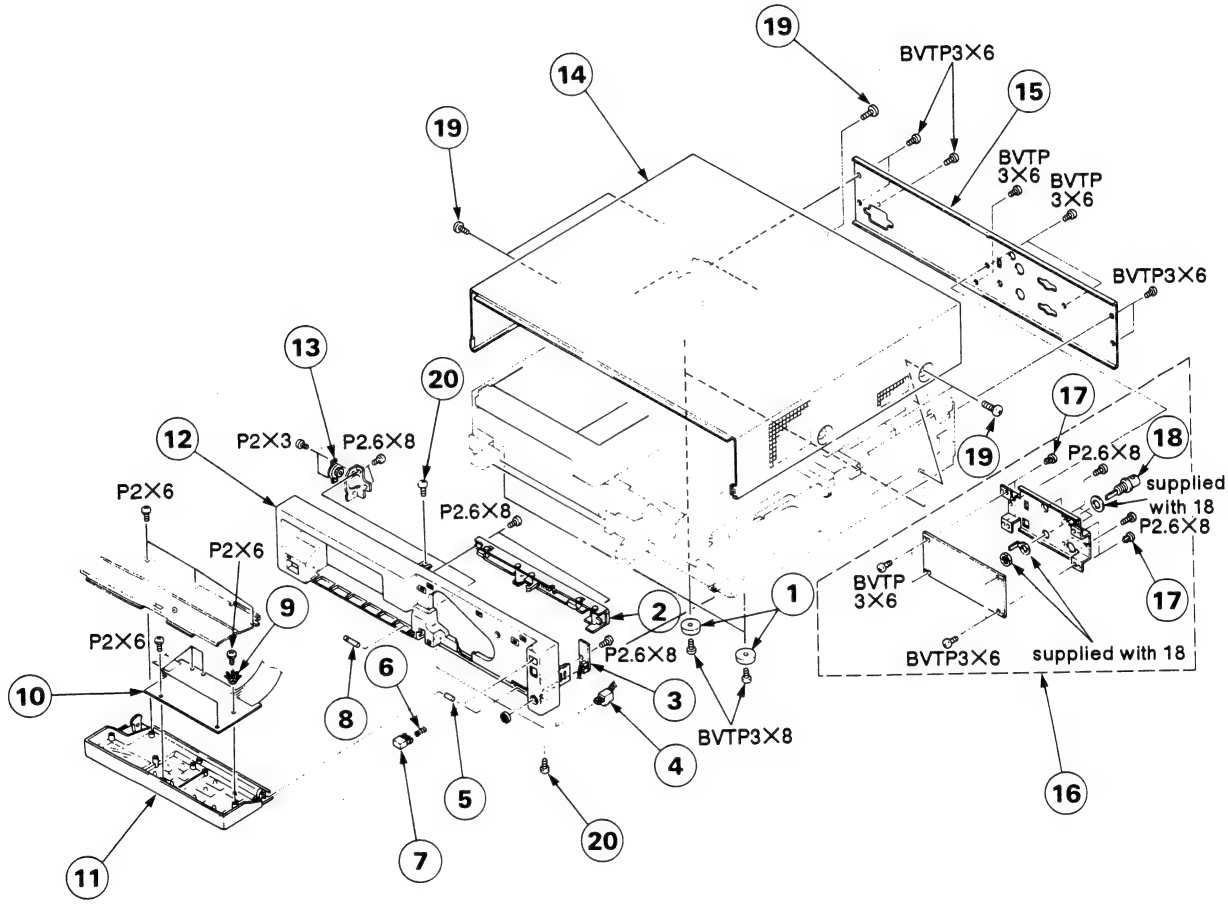
NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " * " are not stocked because they are seldom required for routine servicing. Some delay should be expected when ordering these items.

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

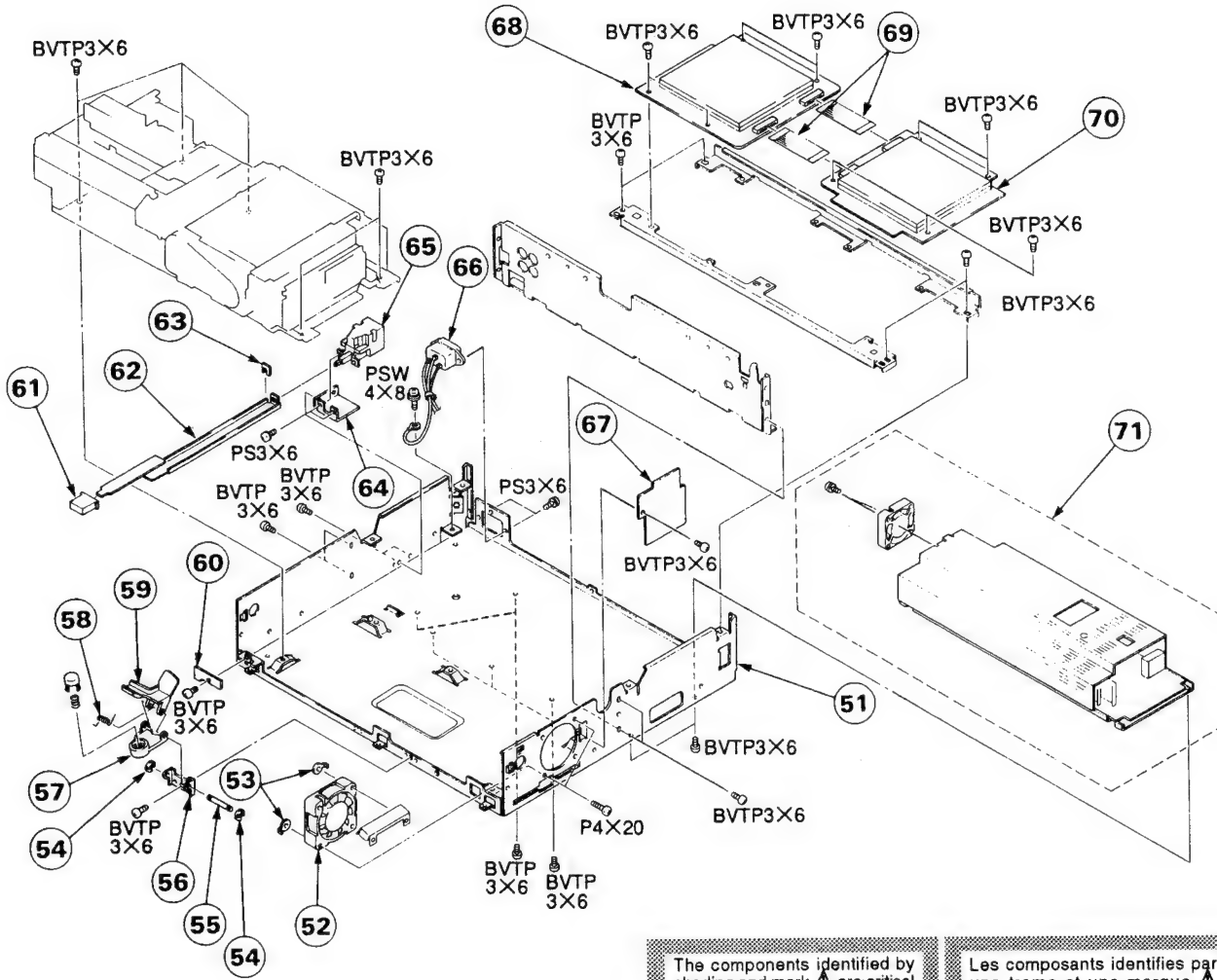
5-1. CABINET ASSEMBLY



Ref.No	Part No.	Description	Remark
1	X-4816-109-1	FOOT ASSY, MINI	
2	A-8267-875-C	CLOSE ASSY, DOOR OPEN	
3	*A-8275-451-A	PTC-27 BOARD, COMPLETE	
4	1-507-195-21	SPECIAL REMOTE CONTROL JACK	
5	3-183-189-01	SHAFT (R), DOOR FULCRUM	
6	3-183-581-02	SPRING, COMPRESSION COIL	
7	3-183-186-03	BUTTON, OPEN	
8	3-183-188-01	SHAFT (L), DOOR FULCRUM	
9	3-183-656-01	SPRING (KY), PLATE	
10	1-692-855-22	KEYBOARD, FFC WITH	

Ref.No	Part No.	Description	Remark
11	X-3167-716-1	PANEL SUB ASSY, DOOR (UP-1200A)	
	X-3167-717-1	PANEL SUB ASSY, DOOR (UP-1200AEPM)	
12	X-3167-373-2	PANEL SUB ASSY, FRONT	
13	3-712-786-21	DUMPER, OIL	
14	*3-183-254-02	COVER, TOP	
15	*3-183-247-03	PANEL, REAR (VIDEO) (UP-1200A)	
	*3-183-247-13	PANEL, REAR (VIDEO) (UP-1200AEPM)	
16	*A-8275-446-B	IF-27 BOARD, COMPLETE	
17	3-531-576-11	RIVET, NYLON	
18	1-562-261-41	CONNECTOR, COAXIAL (BNC)	
19	3-733-690-01	+B 4X6 (CU, N1)	
20	3-184-595-01	SCREW 3X8	

5-2. CHASSIS ASSEMBLY(1)

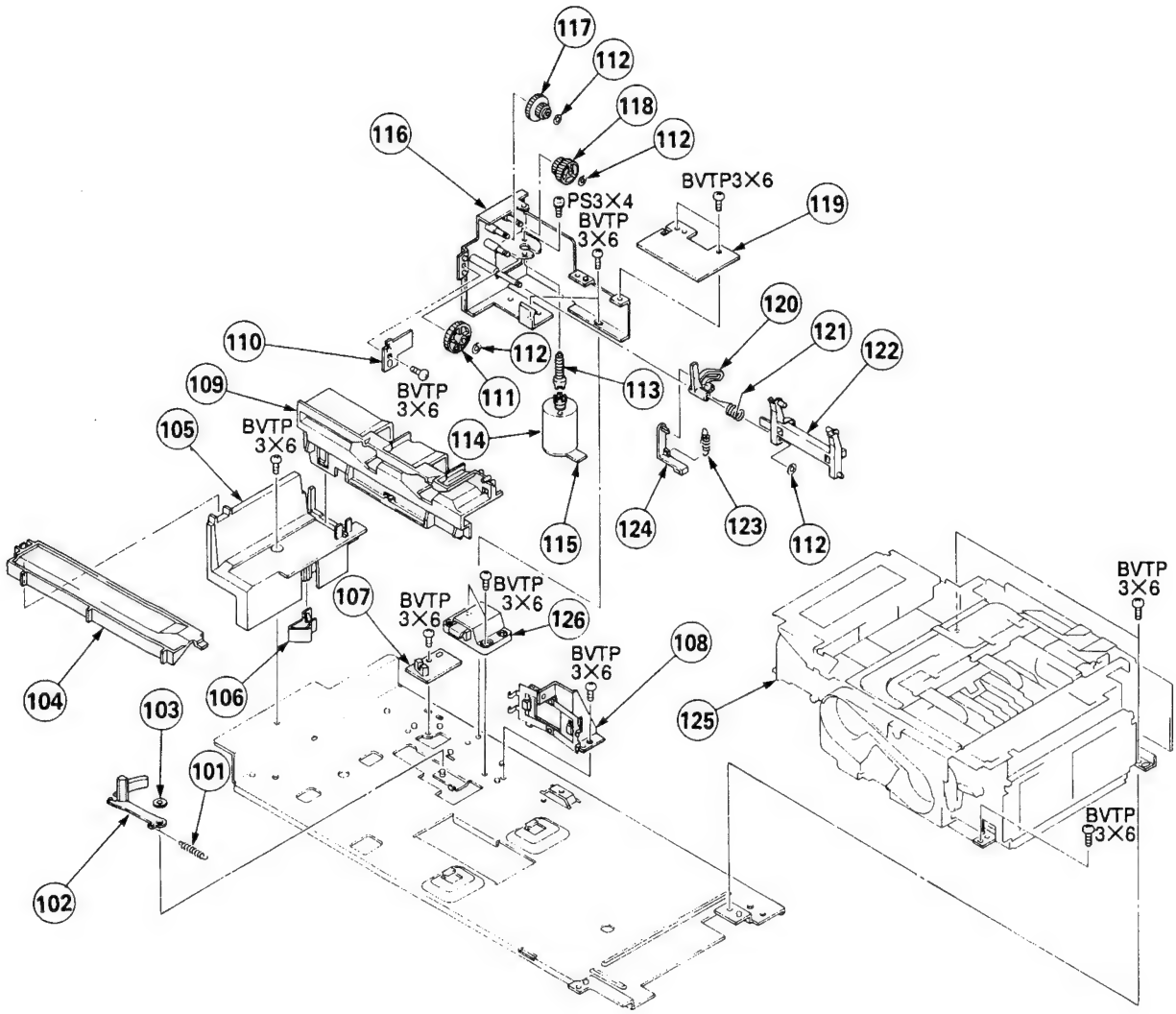


The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

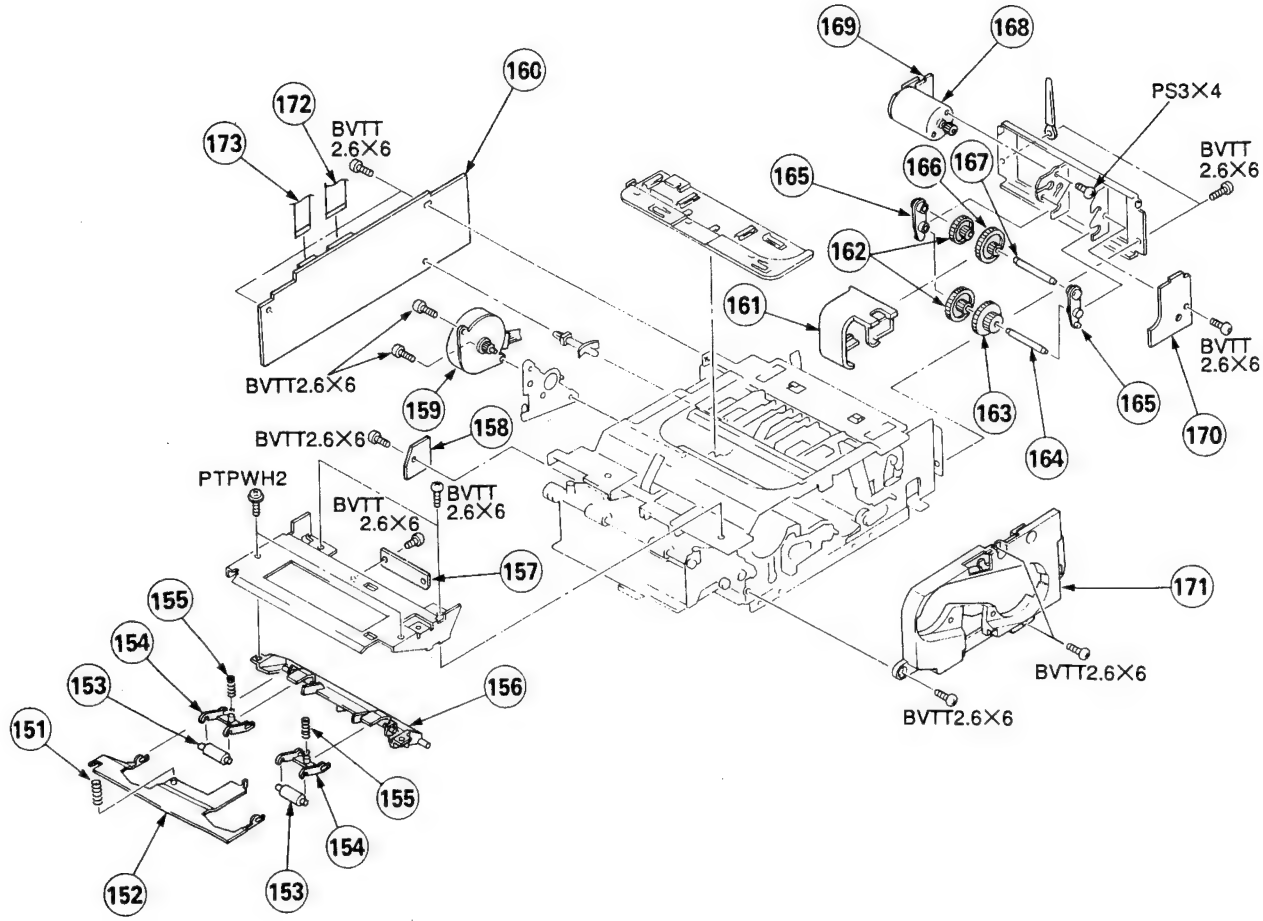
Ref.No	Part No.	Description	Remark
51	*3-183-255-03	CHASSIS	
52	1-541-684-42	MOTOR, DC	
53	3-534-233-00	NUT, ADJUSTMENT	
54	4-926-219-02	RING (DIA.2.3), RETAINING	
55	3-183-200-01	SHAFT, RIBBON PUSH	
56	3-183-187-01	PLATE, FULCRUM	
57	3-183-239-02	PLATE PUSH RIBBON	
58	3-183-183-02	SPRING, TORSION	
59	3-183-238-01	DISCHARGE PLATE, RIBBON	
60	*A-8275-437-A	S-25 BOARD, COMPLETE	
61	2-431-568-31	BUTTON, POWER	
62	*3-183-226-01	ROD, SWITCH	
63	3-725-616-01	STOPPER, ROD	
64	*3-183-178-01	BRACKET, SWITCH	
65	⚠1-554-880-11	SWITCH, PUSH (AC POWER) (1 KEY)	
66	⚠1-580-375-11	INLET 3P	
67	*A-8275-438-A	KY-15 BOARD, COMPLETE	
68	*A-8274-829-A	FMY-13 BOARD, COMPLETE (UP-1200A)	
	*A-8274-822-A	FMY-13P BOARD, COMPLETE (UP-1200AEPM)	
69	1-751-235-11	CABLE, FLAT (FVM-2)	
70	*A-8274-827-A	VA-76 BOARD, COMPLETE (UP-1200A)	
	*A-8274-835-A	VA-76(B) BOARD, COMPLETE (UP-1200AEPM)	
71	⚠*1-413-942-21	SWITCHING REGULATOR (UP-1200A)	
	⚠*1-413-946-21	SWITCHING REGULATOR (UP-1200AEPM)	

5-3. CHASSIS ASSEMBLY(2)



Ref.No	Part No.	Description	Remark
101	3-183-184-01	SPRING, EXTENSION	
102	3-183-605-02	LEVER, PAPER SENSOR	
103	3-325-697-01	WASHER	
104	3-183-240-03	GUIDE, EXIT	
105	3-183-253-01	GUIDE, TRAY	
106	3-183-181-01	SPRING, TRAY	
107	*A-8275-444-A	SW-42 BOARD, COMPLETE	
108	X-3167-310-2	COUNTREMEASURE ASSY	
109	3-183-610-04	COVER	
110	*A-8275-443-A	SW-39 BOARD, COMPLETE	
111	X-3167-307-1	SUB GEAR ASSY, BOSS	
112	4-926-219-02	RING (DIA.2.3), RETAINING	
113	3-950-038-01	GEAR, WORM	
114	X-3942-172-1	MOTOR ASSY, RIBBON	
115	*1-650-853-14	SU-10 BOARD	
116	X-3167-308-4	SUB ASSY, MOTOR BRACKET	
117	3-950-040-01	GEAR (2), RD	
118	3-950-039-01	GEAR (1), RD	
119	*A-8275-445-A	DUS-12 BOARD, COMPLETE	
120	3-183-228-02	LINK	
121	3-183-218-02	SPRING, TORSION	
122	3-183-251-02	ARM	
123	3-183-176-01	SPRING, EXTENSION	
124	3-183-229-03	LEVER, TRAY LOCK	
125	*A-8260-909-A	MD (P201) ASSY (UP-1200A)	
	*A-8267-804-A	MD (P231) ASSY (UP-1200AEPM)	
126	3-183-659-02	LOCK PUSH LATCH	

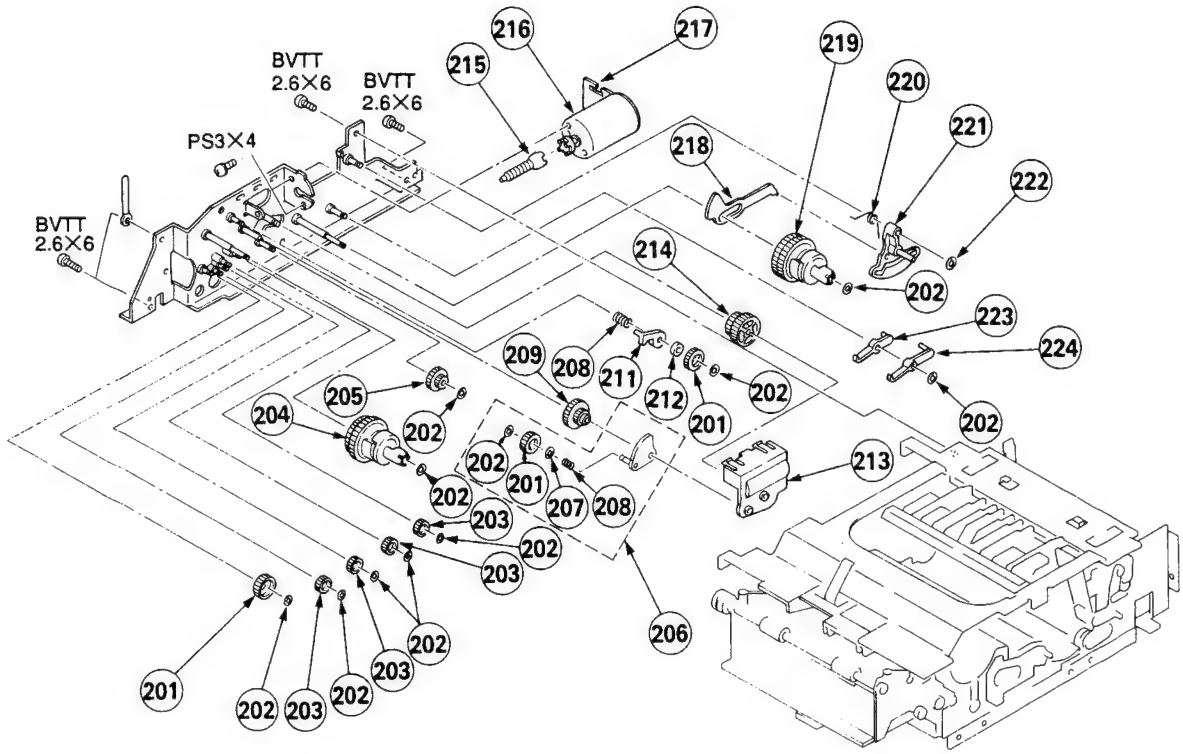
5-4. MECHANISM DECK ASSEMBLY(1)



Ref.No	Part No.	Description	Remark
151	3-183-629-01	SPRING, COMPRESSION (PAPER A)	
152	3-183-605-01	SENSOR LEVER	
153	3-950-009-01	ROLLER, PAPER	
154	3-950-010-01	ARM, PAPER ROLLER	
155	3-950-013-01	SPRING, COMPRESSION	
156	3-183-609-02	GUIDE, UPPER	
157	*A-8275-442-A	SW-41 BOARD, COMPLETE	
158	*A-8275-441-A	SW-213 BOARD, COMPLETE	
159	X-3942-126-1	MOTOR ASSY, STEPPING	
160	*A-8274-824-A	HM-22(L) BOARD, COMPLETE(UP-1200A)	
160	*A-8274-819-A	HM-22P(L) BOARD, COMPLETE(UP-1200AEPM)	
161	*3-952-505-01	GUARD, HEAD GEAR	

Ref.No	Part No.	Description	Remark
162	3-950-019-01	GEAR (A), HEAD DRIVE	
163	3-950-015-01	GEAR (B), HEAD DRIVE	
164	*3-950-020-01	SHAFT, HEAD DRIVE GEAR	
165	*3-950-017-01	HOLDER, HEAD DRIVE GEAR	
166	3-956-727-01	GEAR (E), HEAD DRIVE	
167	*3-950-214-01	SHAFT (S), HEAD DRIVE GEAR	
168	X-3942-122-1	MOTOR, HEAD DRIVE ASSY	
169	*A-8275-435-A	SW-215 BOARD, COMPLETE	
170	*A-8275-436-A	SW-212 BOARD, COMPLETE	
171	X-3167-377-1	GUIDE ASSY, CASSETTE ENTRANCE	
172	1-765-052-11	WIRE, FLAT TYPE (16 CORE)	
173	1-765-051-11	WIRE, FLAT TYPE (7 CORE)	

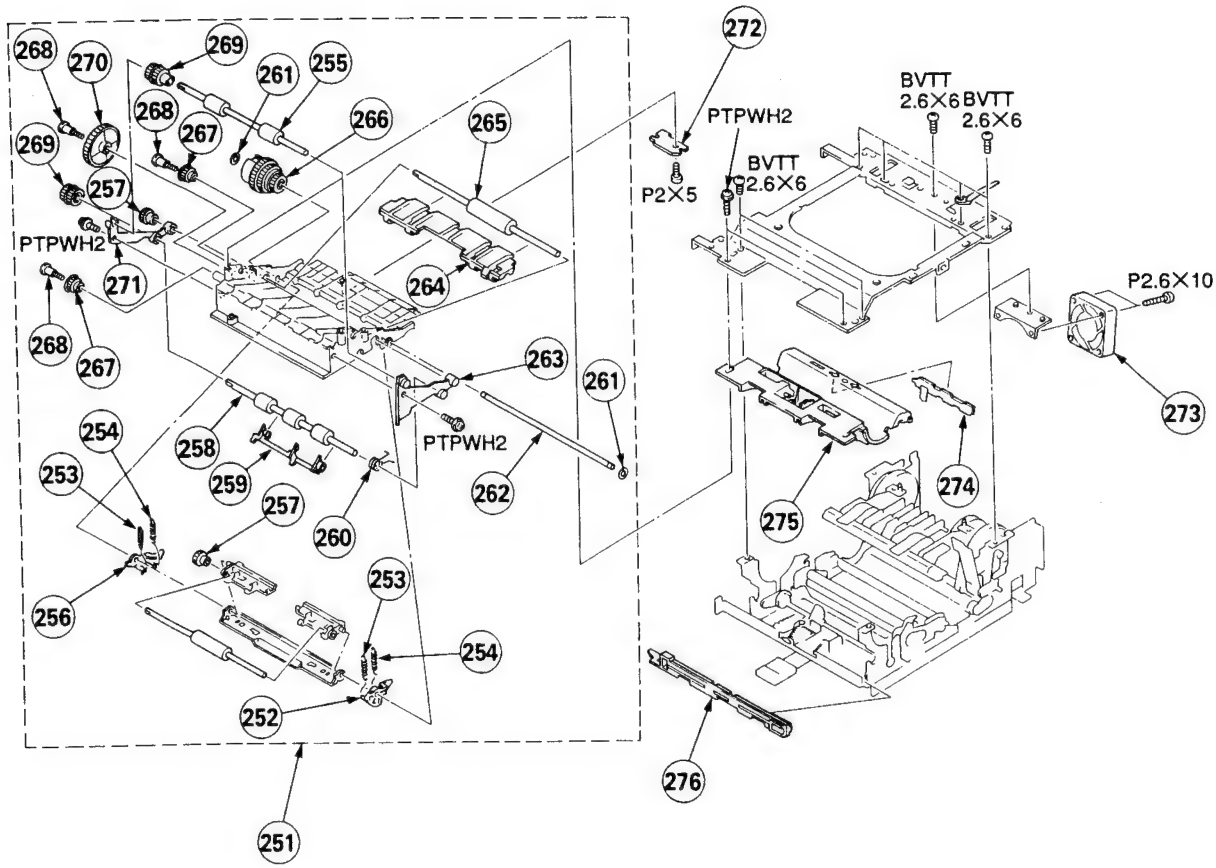
5-5. MECHANISM DECK ASSEMBLY(2)



Ref.No	Part No.	Description	Remark
201	3-950-045-01	GEAR (20)	
202	3-681-678-00	WASHER, STOPPER	
203	3-949-935-01	GEAR (16)	
204	A-8263-674-A	REEL (T) BLOCK ASSY, RIBBON	
205	3-950-048-01	GEAR, SPM IDLER	
206	*A-7018-136-A	ARM BLOCK ASSY, PENDULUM	
207	3-701-441-01	WASHER	
208	3-949-933-01	SPRING (PENDULUM), COMPRESSION	
209	3-950-040-01	GEAR (2), RD	
211	*3-950-046-01	ARM, T LOCK	
212	3-950-051-01	FELT, T LOCK	
213	3-950-049-01	COVER, GEAR	

Ref.No	Part No.	Description	Remark
214	3-950-039-01	GEAR (1), RD	
215	3-183-992-01	GEAR, WORM	
216	X-3942-172-1	MOTOR ASSY, RIBBON	
217	*A-8275-440-A	SW-216 BOARD, COMPLETE	
218	*3-950-035-02	BOARD, SLIDE	
219	A-8263-675-A	REEL (S) BLOCK ASSY, RIBBON	
220	3-950-050-01	SPRING, TORSION	
221	*X-3942-127-1	ARM ASSY, SLIDE	
222	4-926-219-02	RING (DIA.2.3), RETAINING	
223	*3-950-037-01	CLAW, RIBBON BRAKE	
224	*3-950-036-01	CLAW, RIBBON LOCK	

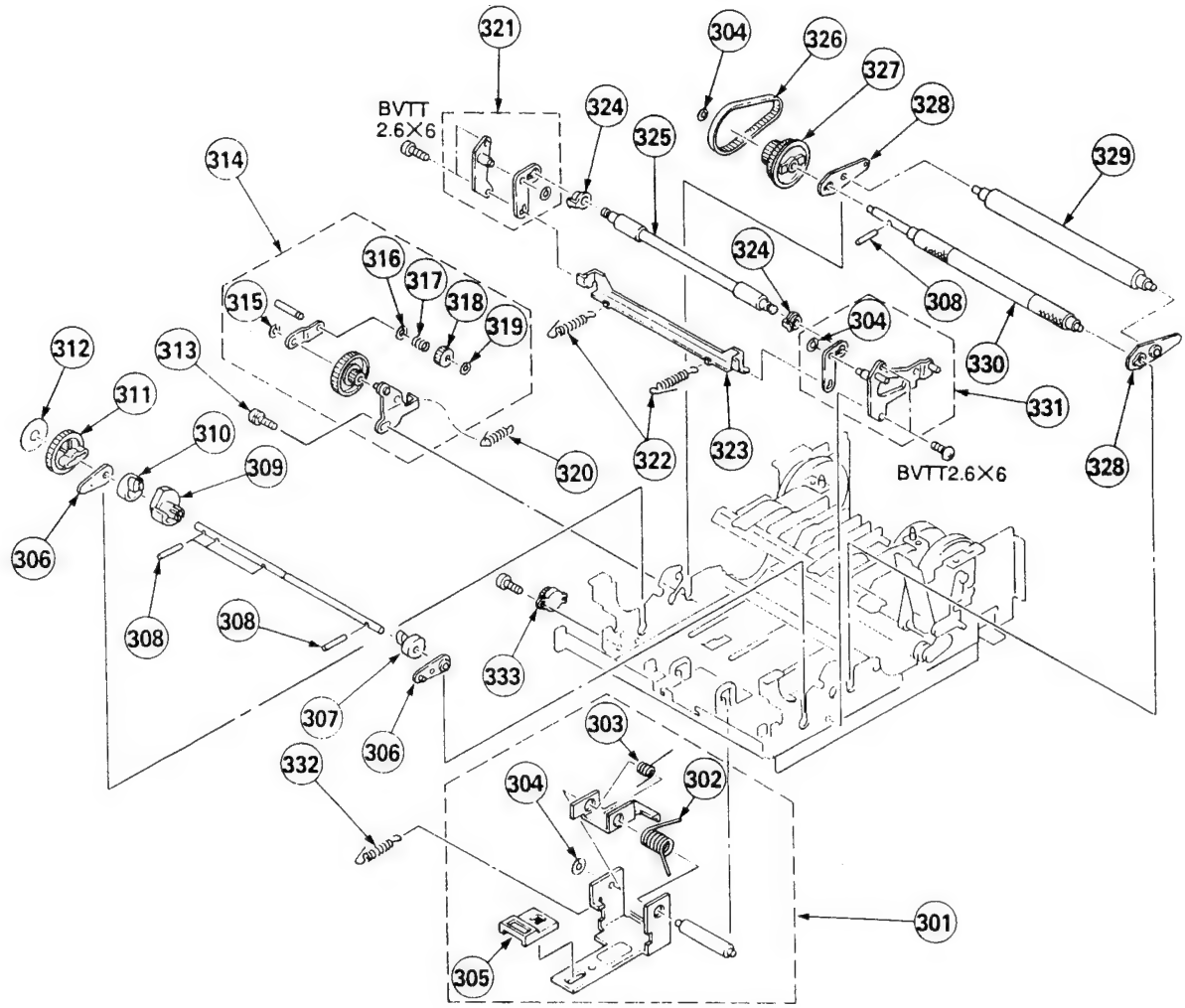
5-6. MECHANISM DECK ASSEMBLY(3)



Ref.No	Part No.	Description	Remark
251	*A-8267-975-B	PAPER ASSY	
252	*3-949-984-11	LEVER (R), RELEASE	
253	3-949-994-01	SPRING, TENSION	
254	3-949-996-01	SPRING (RELEASE LEVER),TENSION	
255	3-183-205-01	ROLLER	
256	*3-949-983-11	LEVER (L), RELEASE	
257	3-949-987-01	GEAR (16D)	
258	3-183-607-01	ROLLER K	
259	*3-949-986-01	RETAINER, PAPER	
260	3-183-204-01	SP (EP), RETAINER	
261	4-926-219-02	RING (DIA.2.3), RETAINING	
262	*3-949-990-01	SHAFT, LIMITER	
263	3-183-230-01	SHAFT RETAINER R (EP)	

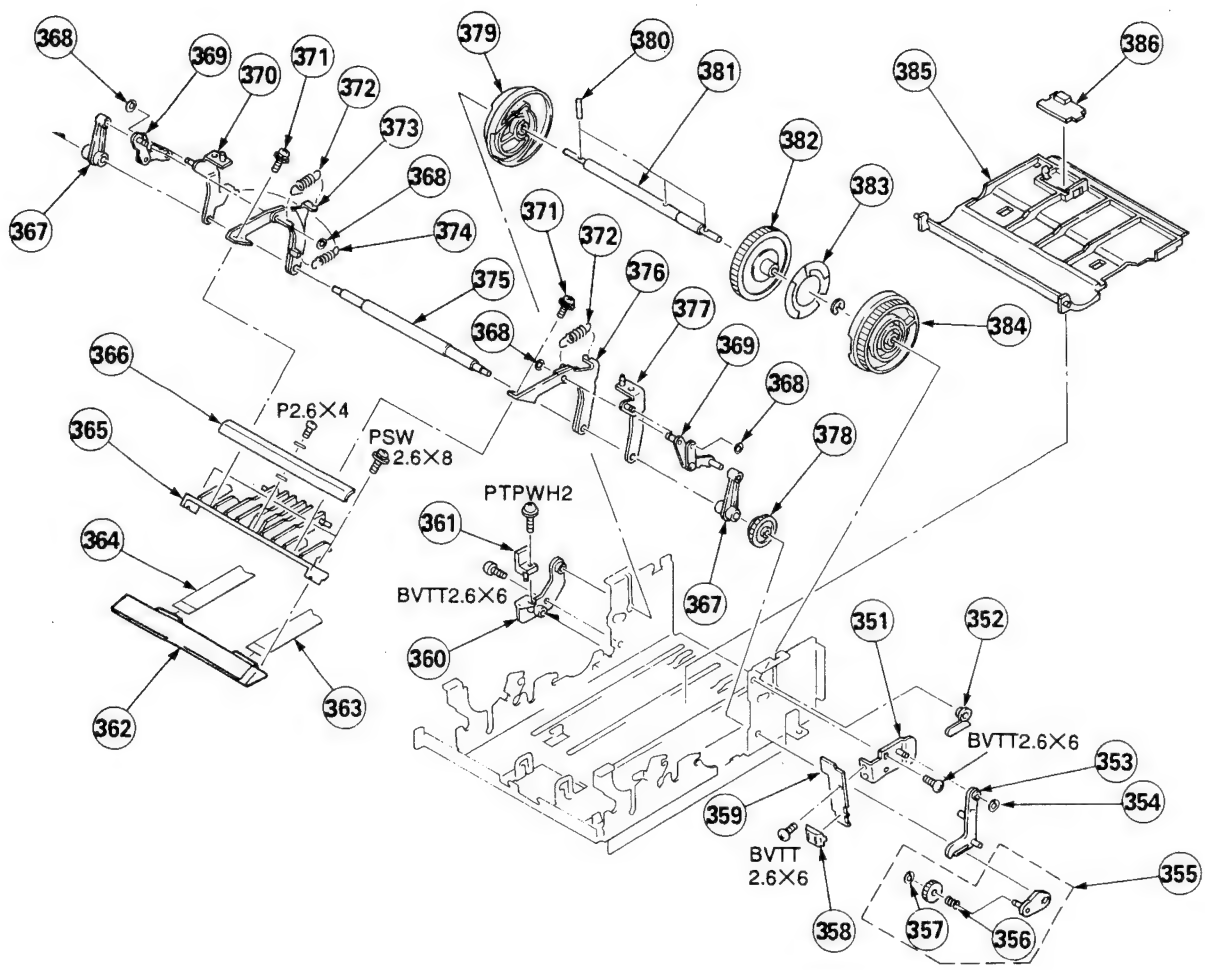
Ref.No	Part No.	Description	Remark
264	*3-949-985-01	SHUTTER, PAPER	
265	3-949-982-01	ROLLER (F)	
266	A-7018-141-A	LIMITER BLOCK ASSY	
267	3-949-989-01	GEAR (16F)	
268	3-950-001-01	SCREW, STEP	
269	3-949-988-01	GEAR (20-21)	
270	3-183-206-01	GEAR	
271	3-183-231-01	SHAFT RETAINER L (EP)	
272	*A-8275-433-A	SW-208 BOARD, COMPLETE	
273	1-698-019-31	MOTOR, DC (FAN)	
274	*A-8275-434-A	SW-211 BOARD, COMPLETE	
275	*3-950-003-01	GUIDE (1), CASSETTE	
276	3-183-232-01	GUIDE, TRAY	

5-7. MECHANISM DECK ASSEMBLY(4)



Ref.No	Part No.	Description	Remark
301	*A-8267-878-C	ARM ASSY	
302	3-183-212-02	TORSION SPRING	
303	3-183-213-03	TORSION SPRING	
304	4-926-219-02	RING (DIA.2.3), RETAINING	
305	3-183-209-02	LEVER	
306	*3-949-912-01	BEARING, PRESS	
307	*3-950-308-01	CAM (R), RETAINER ROLLER PRESS	
308	3-949-911-01	PIN	
309	3-183-216-02	CAM	
310	*3-949-948-01	CAM (L), RETAINER ROLLER PRESS	
311	3-949-951-01	GEAR, P DRIVING	
312	3-949-952-01	REFLECTOR, P SENSOR	
313	3-951-872-01	SCREW (2.6X6)	
314	A-7018-148-A	ARM BLOCK ASSY, TENSION	
315	3-669-596-01	WASHER (2.3), STOPPER	
316	3-701-441-01	WASHER	
317	3-949-933-01	SPRING (PENDULUM), COMPRESSION	
318	3-949-935-01	GEAR (16)	
319	3-681-678-00	WASHER, STOPPER	
320	3-954-567-01	SPRING (TENSION PLATE),TENSION	
321	*A-7018-157-A	ARM (L) BLOCK ASSY, ROLLER	
322	3-955-157-01	SPRING, TENSION	
323	*3-949-939-01	PRESSURE, CAP	
324	3-949-937-01	BEARING, RETAINER ROLLER	
325	3-183-606-01	ROLLER, RETAINER	
326	3-949-915-01	BELT	
327	3-949-918-01	GEAR, CAPSTAN	
328	3-949-910-01	BEARING, PLATEN	
329	*3-949-908-01	ROLLER, PLATEN	
330	*3-949-907-01	ROLLER, CAPSTAN	
331	*A-7018-156-A	ARM (R) BLOCK ASSY, ROLLER	
332	3-949-929-01	SPRING (ARM), TENSION	

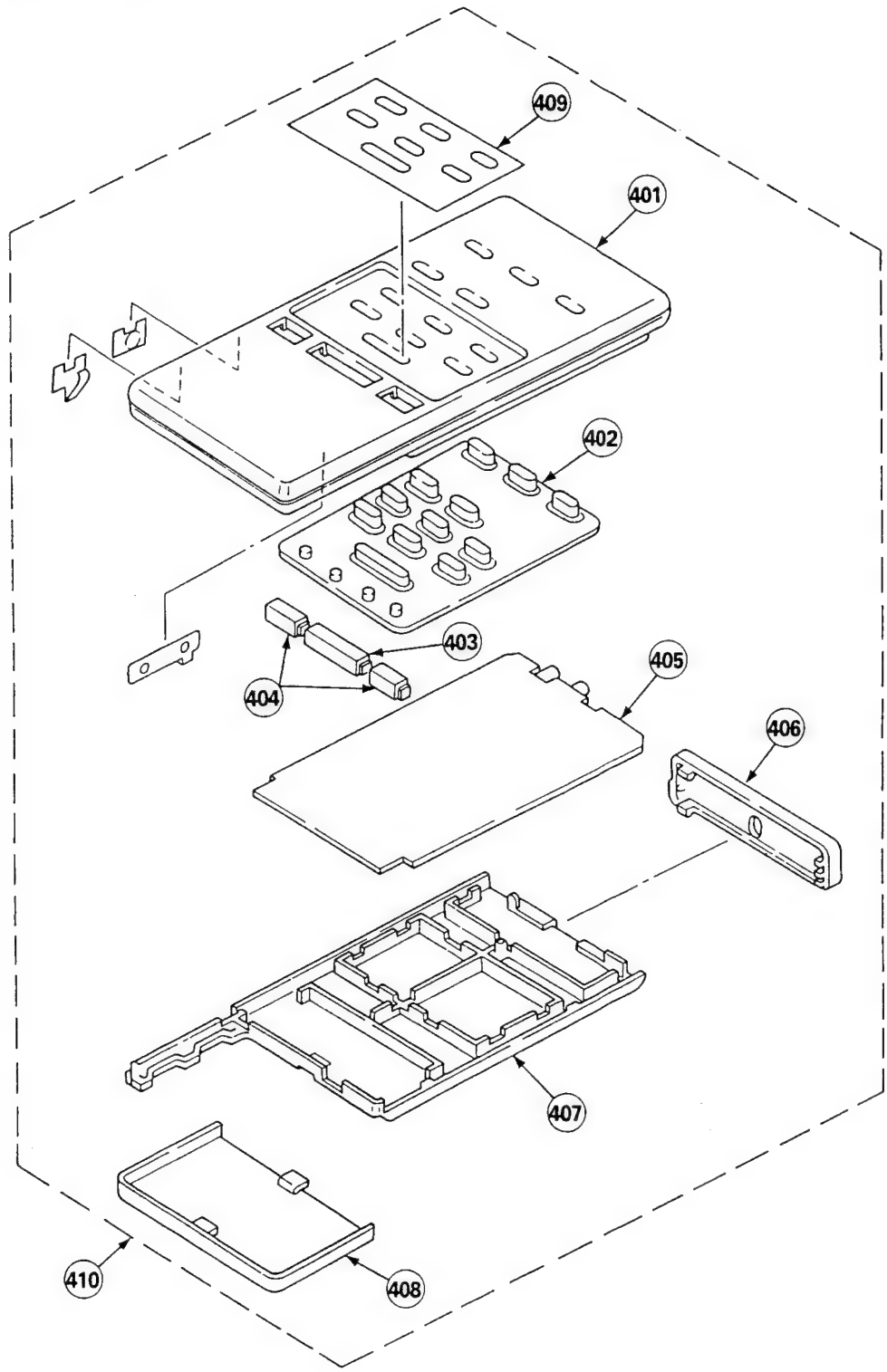
5-8. MECHANISM DECK ASSEMBLY(5)



Ref.No	Part No.	Description	Remark
351	*X-3942-121-1	ARM ASSY, LOCK	
352	3-949-916-01	BEARING, CAM SHAFT	
353	3-950-022-01	ARM, LOCK	
354	3-669-596-01	WASHER (2.3), STOPPER	
355	A-7018-146-A	GEAR BLOCK ASSY, SWING	
356	3-949-933-01	SPRING (PENDULUM), COMPRESSION	
357	3-681-678-00	WASHER, SLIT	
358	*3-952-169-01	COVER, SENSOR	
359	*A-8275-439-A	SW-210 BOARD, COMPLETE	
360	*3-949-974-01	BEARING, HEAD ARM SHAFT	
361	*A-8275-453-A	SW-214 BOARD, COMPLETE	
362	1-543-987-11	HEAD, THERMAL (UP-1200A)	
	1-500-114-11	HEAD, THERMAL (UP-1200AEPM)	
363	1-751-238-11	CABLE, FLAT (FHH-1)	
364	1-751-239-11	CABLE, FLAT (FHH-2)	
365	*3-183-612-01	HEAT SINK	
366	*3-950-142-01	GUIDE, RIBBON	
367	3-949-917-01	LEVER, POWER	
368	4-926-219-02	RING (DIA.2.3), RETAINING	

Ref.No	Part No.	Description	Remark
369	*X-3942-117-1	LINK ASSY	
370	*X-3942-119-1	FULCRUM (L) ASSY, LINK	
371	3-669-607-11	+PSW (SMALL ROUND) (2.6)	
372	3-954-605-01	SPRING (HEAD), TENSION	
373	*X-3942-160-1	ARM ASSY (L), POWER	
374	3-949-973-01	SPRING, TENSION	
375	*3-949-950-01	SHAFT, POWER ARM	
376	*X-3942-159-1	ARM ASSY (R), POWER	
377	*X-3942-118-1	FULCRUM (R) ASSY, LINK	
378	3-950-077-01	GEAR (A), RING SWING	
379	3-949-971-01	CAM (L), HEAD POWER	
380	3-949-911-01	PIN	
381	*3-949-968-01	SHAFT, CAM	
382	3-949-969-01	GEAR (C), HEAD DRIVE	
383	3-949-972-01	PLATE, POSITION, HEAD	
384	3-949-970-01	CAM (R), HEAD POWER	
385	*3-949-909-01	GUIDE (2), CASSETTE	
386	*A-8275-452-A	SW-217 BOARD, COMPLETE	

5-9. REMOTE CONTROL UNIT



Ref.No	Part No.	Description	Remark
401	9-901-744-01	ORNAMENTAL, PANEL	
402	9-901-745-01	SHEET, RUBBER	
403	2-290-632-00	BUTTON, PUSH (L)	
404	2-290-633-01	BUTTON, PUSH (R)	
405	9-997-457-01	SR-W2 BOARD	
406	9-997-453-01	PANEL, FRONT	
407	2-290-611-00	CASE, BOTTOM	
408	2-290-606-51	COVER, BATTERY	
409	9-997-456-01	LABEL, MODEL NUMBER	
410	1-465-508-21	COMMANDER, REMOTE	

SECTION 6
ELECTRICAL PARTS LIST

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NOTE:
- Items marked "*" are not stocked because they are seldom required for routine servicing. Some delay should be expected when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise stated.

RESISTORS
- All resistors are in ohms.
- F:non-flammable

When indicating part by reference number, please include the board name.

CAPACITORS
- MF: μF, PF: μμF

COILS
- MMH: mH, UH: μH

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

Ref.No	Part No.	Description			Remark
	*A-8274-827-A	VA-76 BOARD, COMPLETE (UP-1200A) **********			
		<CAPACITOR>			
C101	1-163-038-00	CERAMIC	0.1uF		25V
C102	1-164-004-11	CERAMIC	0.1uF	10%	25V
C103	1-124-778-00	ELECT	22uF	20%	6.3V
C104	1-163-038-00	CERAMIC	0.1uF		25V
C105	1-164-346-11	CERAMIC	1uF		16V
C106	1-164-346-11	CERAMIC	1uF		16V
C107	1-163-275-11	CERAMIC	0.001uF	5%	50V
C108	1-126-217-11	ELECT	15uF	20%	10V
C109	1-163-038-00	CERAMIC	0.1uF		25V
C110	1-163-110-00	CERAMIC	51PF	5%	50V
C111	1-163-097-00	CERAMIC	15PF	5%	50V
C112	1-163-253-11	CERAMIC	120PF	5%	50V
C113	1-164-346-11	CERAMIC	1uF		16V
C114	1-163-141-00	CERAMIC	0.001uF	5%	50V
C115	1-124-778-00	ELECT	22uF	20%	6.3V
C116	1-163-038-00	CERAMIC	0.1uF		25V
C117	1-126-217-11	ELECT	15uF	20%	10V
C118	1-163-038-00	CERAMIC	0.1uF		25V
C119	1-163-038-00	CERAMIC	0.1uF		25V
C120	1-163-141-00	CERAMIC	0.001uF	5%	50V
C121	1-163-141-00	CERAMIC	0.001uF	5%	50V
C122	1-163-141-00	CERAMIC	0.001uF	5%	50V
C123	1-163-239-11	CERAMIC	33PF	5%	50V
C124	1-163-235-11	CERAMIC	22PF	5%	50V
C125	1-164-004-11	CERAMIC	0.1uF	10%	25V
C126	1-163-141-00	CERAMIC	0.001uF	5%	50V
C127	1-163-038-00	CERAMIC	0.1uF		25V
C128	1-163-275-11	CERAMIC	0.001uF	5%	50V
C129	1-163-275-11	CERAMIC	0.001uF	5%	50V
C131	1-126-217-11	ELECT	15uF	20%	10V
C132	1-163-038-00	CERAMIC	0.1uF		25V
C133	1-163-141-00	CERAMIC	0.001uF	5%	50V
C134	1-165-320-11	CERAMIC	0.47uF	10%	16V
C135	1-126-217-11	ELECT	15uF	20%	10V
C136	1-163-038-00	CERAMIC	0.1uF		25V
C137	1-164-182-11	CERAMIC	0.0033uF	10%	50V
C138	1-163-251-11	CERAMIC	100PF	5%	50V
C139	1-163-038-00	CERAMIC	0.1uF		25V
C140	1-163-038-00	CERAMIC	0.1uF		25V
C141	1-164-004-11	CERAMIC	0.1uF	10%	25V
C143	1-126-217-11	ELECT	15uF	20%	10V
C144	1-163-141-00	CERAMIC	0.001uF	5%	50V
C145	1-164-232-11	CERAMIC	0.01uF	10%	50V
C146	1-164-232-11	CERAMIC	0.01uF	10%	50V
C147	1-164-004-11	CERAMIC	0.1uF	10%	25V

Ref.No	Part No.	Description			Remark
C148	1-163-141-00	CERAMIC	0.001uF	5%	50V
C149	1-164-004-11	CERAMIC	0.1uF	10%	25V
C150	1-164-346-11	CERAMIC	1uF		16V
C151	1-163-038-00	CERAMIC	0.1uF		25V
C152	1-163-139-00	CERAMIC	820PF	5%	50V
C153	1-126-217-11	ELECT	15uF	20%	10V
C154	1-163-038-00	CERAMIC	0.1uF		25V
C155	1-163-038-00	CERAMIC	0.1uF		25V
C156	1-163-038-00	CERAMIC	0.1uF		25V
C157	1-126-217-11	ELECT	15uF	20%	10V
C158	1-164-346-11	CERAMIC	1uF		16V
C159	1-163-038-00	CERAMIC	0.1uF		25V
C160	1-128-065-11	ELECT	68uF	20%	10V
C161	1-126-206-11	ELECT	100uF	20%	6.3V
C162	1-163-038-00	CERAMIC	0.1uF		25V
C163	1-128-065-11	ELECT	68uF	20%	10V
C164	1-126-206-11	ELECT	100uF	20%	6.3V
C165	1-163-038-00	CERAMIC	0.1uF		25V
C166	1-126-217-11	ELECT	15uF	20%	10V
C167	1-163-241-11	CERAMIC	39PF	5%	50V
C168	1-163-243-11	CERAMIC	47PF	5%	50V
C173	1-163-038-00	CERAMIC	0.1uF		25V
C175	1-163-038-00	CERAMIC	0.1uF		25V
C176	1-126-217-11	ELECT	15uF	20%	10V
C177	1-163-038-00	CERAMIC	0.1uF		25V
C180	1-163-141-00	CERAMIC	0.001uF	5%	50V
C181	1-163-235-11	CERAMIC	22PF	5%	50V
C182	1-163-038-00	CERAMIC	0.1uF		25V
C183	1-163-038-00	CERAMIC	0.1uF		25V
C184	1-163-257-11	CERAMIC	180PF	5%	50V
C185	1-163-038-00	CERAMIC	0.1uF		25V
C187	1-163-038-00	CERAMIC	0.1uF		25V
C188	1-164-232-11	CERAMIC	0.01uF	10%	50V
C190	1-163-017-00	CERAMIC	0.0047uF	10%	50V
C191	1-163-137-00	CERAMIC	680PF	5%	50V
C192	1-164-232-11	CERAMIC	0.01uF	10%	50V
C193	1-126-217-11	ELECT	15uF	20%	10V
C194	1-164-232-11	CERAMIC	0.01uF	10%	50V
C195	1-126-217-11	ELECT	15uF	20%	10V
C196	1-164-232-11	CERAMIC	0.01uF	10%	50V
C197	1-164-232-11	CERAMIC	0.01uF	10%	50V
C199	1-126-217-11	ELECT	15uF	20%	10V
C200	1-126-217-11	ELECT	15uF	20%	10V
C201	1-163-141-00	CERAMIC	0.001uF	5%	50V
C202	1-126-603-11	ELECT	4.7uF	20%	35V
C203	1-164-232-11	CERAMIC	0.01uF	10%	50V
C204	1-163-089-00	CERAMIC	6PF		50V
C205	1-163-038-00	CERAMIC	0.1uF		25V
C206	1-164-005-11	CERAMIC	0.47uF		25V
C207	1-163-038-00	CERAMIC	0.1uF		25V

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Ref.No	Part No.	Description			Remark
C209	1-126-217-11	ELECT	15uF	20%	10V
C210	1-164-005-11	CERAMIC	0.47uF		25V
C211	1-164-005-11	CERAMIC	0.47uF		25V
C212	1-163-038-00	CERAMIC	0.1uF		25V
C213	1-126-217-11	ELECT	15uF	20%	10V
C214	1-163-038-00	CERAMIC	0.1uF		25V
C215	1-164-005-11	CERAMIC	0.47uF		25V
C216	1-126-193-11	ELECT	1uF	20%	50V
C217	1-164-005-11	CERAMIC	0.47uF		25V
C218	1-163-235-11	CERAMIC	22PF	5%	50V
C220	1-164-005-11	CERAMIC	0.47uF		25V
C221	1-164-005-11	CERAMIC	0.47uF		25V
C223	1-164-005-11	CERAMIC	0.47uF		25V
C224	1-164-005-11	CERAMIC	0.47uF		25V
C225	1-126-217-11	ELECT	15uF	20%	10V
C226	1-163-038-00	CERAMIC	0.1uF		25V
C227	1-164-005-11	CERAMIC	0.47uF		25V
C228	1-163-251-11	CERAMIC	100PF	5%	50V
C230	1-163-038-00	CERAMIC	0.1uF		25V
C233	1-163-257-11	CERAMIC	180PF	5%	50V
C250	1-163-127-00	CERAMIC	270PF	5%	50V
C251	1-163-110-00	CERAMIC	51PF	5%	50V
C252	1-126-217-11	ELECT	15uF	20%	10V
C260	1-164-004-11	CERAMIC	0.1uF	10%	25V
C271	1-126-217-11	ELECT	15uF	20%	10V
C281	1-126-207-11	ELECT	33uF	20%	4V
C282	1-126-217-11	ELECT	15uF	20%	10V
C285	1-164-005-11	CERAMIC	0.47uF		25V
C286	1-164-005-11	CERAMIC	0.47uF		25V
C290	1-164-005-11	CERAMIC	0.47uF		25V
C291	1-164-005-11	CERAMIC	0.47uF		25V
C295	1-164-004-11	CERAMIC	0.1uF	10%	25V
C301	1-126-217-11	ELECT	15uF	20%	10V
C302	1-163-038-00	CERAMIC	0.1uF		25V
C303	1-163-077-00	CERAMIC	0.1uF	10%	25V
C304	1-163-077-00	CERAMIC	0.1uF	10%	25V
C305	1-163-038-00	CERAMIC	0.1uF		25V
C306	1-164-004-11	CERAMIC	0.1uF	10%	25V
C307	1-126-217-11	ELECT	15uF	20%	10V
C308	1-164-346-11	CERAMIC	1uF		16V
C309	1-126-217-11	ELECT	15uF	20%	10V
C310	1-163-038-00	CERAMIC	0.1uF		25V
C311	1-163-038-00	CERAMIC	0.1uF		25V
C312	1-126-217-11	ELECT	15uF	20%	10V
C313	1-163-038-00	CERAMIC	0.1uF		25V
C314	1-126-217-11	ELECT	15uF	20%	10V
C315	1-126-217-11	ELECT	15uF	20%	10V
C316	1-126-217-11	ELECT	15uF	20%	10V
C317	1-126-217-11	ELECT	15uF	20%	10V
C318	1-126-217-11	ELECT	15uF	20%	10V
C319	1-163-038-00	CERAMIC	0.1uF		25V
C320	1-163-038-00	CERAMIC	0.1uF		25V
C321	1-126-217-11	ELECT	15uF	20%	10V
C322	1-126-217-11	ELECT	15uF	20%	10V
C323	1-163-038-00	CERAMIC	0.1uF		25V
C324	1-163-038-00	CERAMIC	0.1uF		25V
C325	1-163-117-00	CERAMIC	100PF	5%	50V
C326	1-163-117-00	CERAMIC	100PF	5%	50V
C327	1-163-038-00	CERAMIC	0.1uF		25V
C335	1-126-217-11	ELECT	15uF	20%	10V
C336	1-163-038-00	CERAMIC	0.1uF		25V
C337	1-163-227-11	CERAMIC	10PF		50V
C338	1-164-004-11	CERAMIC	0.1uF	10%	25V
C339	1-126-217-11	ELECT	15uF	20%	10V
C340	1-163-038-00	CERAMIC	0.1uF		25V
C341	1-126-217-11	ELECT	15uF	20%	10V
C342	1-163-038-00	CERAMIC	0.1uF		25V
C343	1-126-217-11	ELECT	15uF	20%	10V
C344	1-163-038-00	CERAMIC	0.1uF		25V
C345	1-126-217-11	ELECT	15uF	20%	10V
C346	1-163-038-00	CERAMIC	0.1uF		25V
C347	1-163-227-11	CERAMIC	10PF		50V
C348	1-164-004-11	CERAMIC	0.1uF	10%	25V
C349	1-128-065-11	ELECT	68uF	20%	10V
C350	1-163-038-00	CERAMIC	0.1uF		25V
C351	1-126-217-11	ELECT	15uF	20%	10V
C352	1-163-038-00	CERAMIC	0.1uF		25V
C353	1-163-809-11	CERAMIC	0.047uF	10%	25V
C354	1-163-037-11	CERAMIC	0.022uF	10%	25V
C355	1-163-038-00	CERAMIC	0.1uF		25V
C356	1-163-809-11	CERAMIC	0.047uF	10%	25V
C357	1-164-489-11	CERAMIC	0.22uF	10%	16V
C358	1-164-004-11	CERAMIC	0.1uF	10%	25V
C359	1-126-193-11	ELECT	1uF	20%	50V
C360	1-163-106-00	CERAMIC	36PF	5%	50V
C363	1-128-065-11	ELECT	68uF	20%	10V
C364	1-163-038-00	CERAMIC	0.1uF		25V
C368	1-163-038-00	CERAMIC	0.1uF		25V
C369	1-126-217-11	ELECT	15uF	20%	10V
C370	1-163-038-00	CERAMIC	0.1uF		25V
C371	1-163-038-00	CERAMIC	0.1uF		25V
C372	1-126-603-11	ELECT	4.7uF	20%	35V
C373	1-163-227-11	CERAMIC	10PF		50V
C374	1-164-004-11	CERAMIC	0.1uF	10%	25V
C375	1-163-038-00	CERAMIC	0.1uF		25V
C376	1-164-232-11	CERAMIC	0.01uF	10%	50V
C377	1-135-145-11	TANTAL	0.47uF	20%	25V
C378	1-126-217-11	ELECT	15uF	20%	10V
C379	1-163-038-00	CERAMIC	0.1uF		25V
C380	1-126-217-11	ELECT	15uF	20%	10V
C381	1-163-245-11	CERAMIC	56PF	5%	50V
C382	1-135-210-11	TANTAL	4.7uF	10%	10V
C383	1-163-038-00	CERAMIC	0.1uF		25V
C384	1-163-038-00	CERAMIC	0.1uF		25V
C385	1-163-038-00	CERAMIC	0.1uF		25V
C386	1-164-232-11	CERAMIC	0.01uF	10%	50V
C387	1-163-038-00	CERAMIC	0.1uF		25V
C388	1-126-217-11	ELECT	15uF	20%	10V
C389	1-163-038-00	CERAMIC	0.1uF		25V
C390	1-163-038-00	CERAMIC	0.1uF		25V
C391	1-163-229-11	CERAMIC	12PF	5%	50V
C393	1-163-038-00	CERAMIC	0.1uF		25V
C394	1-128-065-11	ELECT	68uF	20%	10V
C395	1-163-038-00	CERAMIC	0.1uF		25V
C396	1-126-217-11	ELECT	15uF	20%	10V
C404	1-163-038-00	CERAMIC	0.1uF		25V
C405	1-163-235-11	CERAMIC	22PF	5%	50V
C410	1-163-243-11	CERAMIC	47PF	5%	50V
C482	1-163-251-11	CERAMIC	100PF	5%	50V
C501	1-126-217-11	ELECT	15uF	20%	10V
C502	1-163-038-00	CERAMIC	0.1uF		25V
C503	1-163-038-00	CERAMIC	0.1uF		25V
C504	1-126-217-11	ELECT	15uF	20%	10V
C505	1-163-239-11	CERAMIC	33PF	5%	50V
C506	1-163-239-11	CERAMIC	33PF	5%	50V
C507	1-163-038-00	CERAMIC	0.1uF		25V
C508	1-163-038-00	CERAMIC	0.1uF		25V
C509	1-126-217-11	ELECT	15uF	20%	10V
C512	1-163-038-00	CERAMIC	0.1uF		25V
C513	1-164-005-11	CERAMIC	0.47uF		25V

Ref.No	Part No.	Description			Remark
C514	1-163-038-91	CERAMIC	0.1uF		25V
C515	1-163-038-91	CERAMIC	0.1uF		25V
C516	1-126-217-11	ELECT	15uF	20%	10V
C517	1-163-038-91	CERAMIC	0.1uF		25V
C518	1-164-232-11	CERAMIC	0.01uF	10%	50V
C519	1-164-232-11	CERAMIC	0.01uF	10%	50V
C520	1-163-809-11	CERAMIC	0.047uF	10%	25V
C521	1-163-809-11	CERAMIC	0.047uF	10%	25V
C522	1-163-809-11	CERAMIC	0.047uF	10%	25V
C523	1-164-232-11	CERAMIC	0.01uF	10%	50V
C524	1-164-005-11	CERAMIC	0.47uF		25V
C525	1-126-217-11	ELECT	15uF	20%	10V
C526	1-126-217-11	ELECT	15uF	20%	10V
C527	1-163-038-00	CERAMIC	0.1uF		25V
C528	1-163-038-00	CERAMIC	0.1uF		25V
C529	1-163-038-00	CERAMIC	0.1uF		25V
C530	1-126-217-11	ELECT	15uF	20%	10V
C531	1-163-038-00	CERAMIC	0.1uF		25V
C532	1-126-217-11	ELECT	15uF	20%	10V
C533	1-163-038-00	CERAMIC	0.1uF		25V
C534	1-126-217-11	ELECT	15uF	20%	10V
C535	1-163-038-00	CERAMIC	0.1uF		25V
C536	1-164-005-11	CERAMIC	0.47uF		25V
C537	1-164-005-11	CERAMIC	0.47uF		25V
C538	1-126-217-11	ELECT	15uF	20%	10V
C539	1-164-232-11	CERAMIC	0.01uF	10%	50V
C540	1-164-232-11	CERAMIC	0.01uF	10%	50V
C541	1-164-232-11	CERAMIC	0.01uF	10%	50V
C543	1-163-235-11	CERAMIC	22PF	5%	50V
C544	1-164-004-11	CERAMIC	0.1uF	10%	25V
C545	1-126-217-11	ELECT	15uF	20%	10V
C546	1-163-038-00	CERAMIC	0.1uF		25V
C547	1-163-038-00	CERAMIC	0.1uF		25V
C570	1-163-038-00	CERAMIC	0.1uF		25V
C571	1-126-217-11	ELECT	15uF	20%	10V
C572	1-126-217-11	ELECT	15uF	20%	10V
C611	1-126-217-11	ELECT	15uF	20%	10V
C651	1-128-065-11	ELECT	68uF	20%	10V
C901	1-163-239-11	CERAMIC	33PF	5%	50V
C902	1-163-239-11	CERAMIC	33PF	5%	50V
C903	1-163-239-11	CERAMIC	33PF	5%	50V
C910	1-135-210-11	TANTAL	4.7uF	10%	10V
C911	1-135-210-11	TANTAL	4.7uF	10%	10V
C950	1-163-127-00	CERAMIC	270PF	5%	50V
C951	1-163-239-11	CERAMIC	33PF	5%	50V
		<CONNECTOR>			
CN101	1-565-212-11	CONNECTOR, FPC (ZIF)			26P
CN102	1-565-212-11	CONNECTOR, FPC (ZIF)			26P
CN105	*1-560-892-00	PIN, CONNECTOR 4P			
CN110	1-506-472-11	PIN, CONNECTOR 7P			
CN502	*1-564-005-11	PIN, CONNECTOR 6P			
		<TRIMMER>			
CT101	1-141-423-61	CAP, ADJ			
CT102	1-141-423-61	CAP, ADJ			
		<DIODE>			
D101	8-719-002-81	DIODE 1T363A			
D109	8-719-820-41	DIODE 1SS302			
D110	8-719-820-41	DIODE 1SS302			
D125	8-719-024-82	DIODE 1SS300			
D301	8-719-820-41	DIODE 1SS302			

Ref.No	Part No.	Description	Remark
D302	8-719-820-41	DIODE 1SS302	
D310	8-719-820-41	DIODE 1SS302	
D311	8-719-820-41	DIODE 1SS302	
D312	8-719-820-41	DIODE 1SS302	
D313	8-719-820-41	DIODE 1SS302	
D503	8-719-820-41	DIODE 1SS302	
D508	8-719-820-41	DIODE 1SS302	
D509	8-719-820-41	DIODE 1SS302	
D910	8-719-025-18	DIODE 02CZ2.0-TE85L	
D911	8-719-025-18	DIODE 02CZ2.0-TE85L	
D912	8-719-025-18	DIODE 02CZ2.0-TE85L	
		<DELAY LINE>	
DL301	1-406-516-11	DELAY LINE, LC (140NS) (EQ)	
DL302	1-239-565-11	FILTER, LOW PASS	
		<FERRITE, BEAD>	
FB108	1-412-390-21	INDUCTOR CHIP 0UH	
FB109	1-412-390-21	INDUCTOR CHIP 0UH	
FB305	1-412-390-21	INDUCTOR CHIP 0UH	
FB306	1-412-390-21	INDUCTOR CHIP 0UH	
FB307	1-412-390-21	INDUCTOR CHIP 0UH	
FB308	1-412-390-21	INDUCTOR CHIP 0UH	
FB309	1-412-390-21	INDUCTOR CHIP 0UH	
FB310	1-412-390-21	INDUCTOR CHIP 0UH	
FB920	1-412-390-21	INDUCTOR CHIP 0UH	
FB921	1-412-390-21	INDUCTOR CHIP 0UH	
FB922	1-412-390-21	INDUCTOR CHIP 0UH	
		<FILTER>	
FL101	1-239-492-11	FILTER, EMI	
FL201	1-239-563-11	FILTER, LOW PASS	
FL202	1-236-191-11	FILTER, BAND PASS	
FL203	1-239-564-11	FILTER, LOW PASS	
FL304	1-406-515-11	DELAY LINE, LC	
FL501	1-239-563-11	FILTER, LOW PASS	
FL502	1-239-563-11	FILTER, LOW PASS	
FL503	1-239-563-11	FILTER, LOW PASS	
FL504	1-239-564-11	FILTER, LOW PASS	
FL505	1-236-191-11	FILTER, BAND PASS	
		<IC>	
IC101	8-759-079-66	IC TC74VHC123AFS	
IC102	8-759-105-49	IC UPC319G2	
IC103	8-759-085-67	IC UPC339G2	
IC104	8-759-996-43	IC RC4558PS	
IC106	8-759-710-12	IC NJM2230M	
IC107	8-752-326-08	IC CXD1159Q	
IC108	8-759-907-81	IC SN74LS221NS	
IC109	8-759-242-70	IC TC7WU04F	
IC110	8-759-907-81	IC SN74LS221NS	
IC111	8-759-981-48	IC TL082CPS	
IC112	8-759-011-65	IC MC74HC4053F	
IC113	8-759-157-22	IC PQ06TZ1U	
IC114	8-759-157-17	IC PQ05SZ1U	
IC119	8-759-097-87	IC MB621948	
IC120	8-759-711-62	IC NJM2240M	
IC121	8-752-352-20	IC CXD2023Q	
IC122	8-759-710-86	IC NJM2233BM	
IC123	8-759-710-07	IC NJM2234M	
IC125	8-759-710-86	IC NJM2233BM	
IC126	8-759-242-64	IC TC4W53F	

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Ref.No	Part No.	Description	Remark
IC128	8-759-242-72	IC TC7W00F	
IC130	8-752-326-08	IC CXD1159Q	
IC150	8-759-242-76	IC TC7W08F	
IC301	8-752-054-80	IC CXA1521M	
IC302	8-759-011-65	IC MC74HC4053F	
IC303	8-759-060-00	IC LM324DR	
IC304	8-759-060-00	IC LM324DR	
IC306	8-759-105-49	IC UPC319G2	
IC307	8-759-635-27	IC M62352GP	
IC308	8-759-635-27	IC M62352GP	
IC309	8-759-278-57	IC AK6420HF	
IC311	8-752-058-96	IC CXA1585Q	
IC312	8-759-929-26	IC TL431CPS	
IC313	8-759-745-64	IC NJM4560M	
IC314	8-759-060-00	IC LM324DR	
IC320	8-759-745-64	IC NJM4560M	
IC501	8-759-011-65	IC MC74HC4053F	
IC504	8-759-254-98	IC M50555-218FP-TE2	
IC506	8-752-033-07	IC CXA1145M	
IC507	8-752-053-21	IC CXA1211M	
IC508	8-759-710-86	IC NJM2233BM	
IC511	8-752-053-21	IC CXA1211M	
		<JACK>	
J101	1-565-276-21	JACK, ULTRA SMALL 1P	
		<INDUCTOR>	
L101	1-410-389-31	INDUCTOR CHIP 47UH	
L102	1-410-388-31	INDUCTOR CHIP 39UH	
L103	1-412-137-11	INDUCTOR 10UH	
L110	1-410-200-31	INDUCTOR CHIP 4.7UH	
L120	1-410-385-11	INDUCTOR CHIP 22UH	
L130	1-410-385-11	INDUCTOR CHIP 22UH	
L301	1-410-377-31	INDUCTOR CHIP 4.7UH	
L302	1-410-389-31	INDUCTOR CHIP 47UH	
L303	1-410-388-31	INDUCTOR CHIP 39UH	
L350	1-410-377-31	INDUCTOR CHIP 4.7UH	
L501	1-410-384-31	INDUCTOR CHIP 18UH	
L901	1-410-730-11	INDUCTOR CHIP 0.12UH	
L902	1-410-730-11	INDUCTOR CHIP 0.12UH	
L903	1-410-730-11	INDUCTOR CHIP 0.12UH	
L904	1-412-188-11	INDUCTOR 22UH	
		<FILTER>	
LF101	1-424-090-11	COIL, LINE FILTER	
LF102	1-424-090-11	COIL, LINE FILTER	
LF106	1-424-090-11	COIL, LINE FILTER	
		<TRANSISTOR>	
Q101	8-729-230-60	TRANSISTOR 2SA1586YG	
Q102	8-729-230-60	TRANSISTOR 2SA1586YG	
Q103	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q104	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q106	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q108	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q109	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q110	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q111	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q112	8-729-230-60	TRANSISTOR 2SA1586YG	
Q113	8-729-402-87	TRANSISTOR XN2401	
Q116	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q117	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q118	8-729-402-84	TRANSISTOR XN4601	
Q119	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	

Ref.No	Part No.	Description	Remark
Q120	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q121	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q122	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q123	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L	
Q124	8-729-402-84	TRANSISTOR XN4601	
Q125	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q126	8-729-402-84	TRANSISTOR XN4601	
Q301	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L	
Q302	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q303	8-729-402-84	TRANSISTOR XN4601	
Q304	8-729-402-84	TRANSISTOR XN4601	
Q305	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q306	8-729-230-60	TRANSISTOR 2SA1586YG	
Q307	8-729-232-66	TRANSISTOR 2SA1618	
Q308	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q309	8-729-402-81	TRANSISTOR XN4501	
Q310	8-729-230-60	TRANSISTOR 2SA1586YG	
Q311	8-729-402-81	TRANSISTOR XN4501	
Q316	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q320	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q321	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L	
Q322	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q323	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q324	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L	
Q326	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q328	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q329	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q330	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L	
Q334	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q335	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L	
Q336	8-729-230-60	TRANSISTOR 2SA1586YG-TE85L	
Q350	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q360	8-729-402-84	TRANSISTOR XN4601	
Q361	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q501	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q502	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q503	8-729-230-60	TRANSISTOR 2SA1586YG	
Q504	8-729-230-60	TRANSISTOR 2SA1586YG	
Q505	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q506	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q507	8-729-232-66	TRANSISTOR 2SA1618	
Q508	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q509	8-729-232-66	TRANSISTOR 2SA1618	
Q510	8-729-232-66	TRANSISTOR 2SA1618	
Q511	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q512	8-729-230-60	TRANSISTOR 2SA1586YG	
Q513	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q514	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q515	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q516	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q517	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q518	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q519	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q520	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q521	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q522	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q523	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q525	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q526	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q527	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L	
Q528	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L	
Q529	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L	
Q530	8-729-230-60	TRANSISTOR 2SA1586YG	
Q531	8-729-230-60	TRANSISTOR 2SA1586YG	
Q532	8-729-230-60	TRANSISTOR 2SA1586YG	

Ref.No	Part No.	Description			Remark
Q540	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L			
Q901	8-729-230-60	TRANSISTOR 2SA1586YG			
Q902	8-729-230-63	TRANSISTOR 2SC4116YG-TE85L			
Q910	8-729-230-60	TRANSISTOR 2SA1586YG			
		<REGISTOR>			
R101	1-216-051-00	METAL	1.2K	5%	1/10W
R102	1-216-053-00	METAL	1.5K	5%	1/10W
R103	1-216-053-00	METAL	1.5K	5%	1/10W
R105	1-216-057-00	METAL	2.2K	5%	1/10W
R106	1-216-057-00	METAL	2.2K	5%	1/10W
R107	1-216-065-00	METAL	4.7K	5%	1/10W
R108	1-216-057-00	METAL	2.2K	5%	1/10W
R109	1-216-057-00	METAL	2.2K	5%	1/10W
R110	1-216-053-00	METAL	1.5K	5%	1/10W
R111	1-216-075-00	METAL	12K	5%	1/10W
R112	1-216-001-00	METAL	10	5%	1/10W
R113	1-216-057-00	METAL	2.2K	5%	1/10W
R114	1-216-065-00	METAL	4.7K	5%	1/10W
R115	1-216-057-00	METAL	2.2K	5%	1/10W
R116	1-216-081-00	METAL	22K	5%	1/10W
R117	1-216-049-00	METAL	1K	5%	1/10W
R118	1-216-075-00	METAL	12K	5%	1/10W
R119	1-216-073-00	METAL	10K	5%	1/10W
R120	1-216-075-00	METAL	12K	5%	1/10W
R121	1-216-035-00	METAL	270	5%	1/10W
R123	1-216-049-00	METAL	1K	5%	1/10W
R124	1-216-065-00	METAL	4.7K	5%	1/10W
R125	1-216-033-00	METAL	220	5%	1/10W
R126	1-216-295-11	METAL	0	5%	1/10W
R127	1-216-037-00	METAL	330	5%	1/10W
R128	1-216-085-00	METAL	33K	5%	1/10W
R129	1-216-069-00	METAL	6.8K	5%	1/10W
R130	1-216-083-00	METAL	27K	5%	1/10W
R131	1-216-073-00	METAL	10K	5%	1/10W
R132	1-216-073-00	METAL	10K	5%	1/10W
R133	1-216-097-00	METAL	100K	5%	1/10W
R134	1-216-049-91	METAL	1K	5%	1/10W
R135	1-216-033-00	METAL	220	5%	1/10W
R136	1-216-091-00	METAL	56K	5%	1/10W
R137	1-216-053-00	METAL	1.5K	5%	1/10W
R138	1-216-051-00	METAL	1.2K	5%	1/10W
R139	1-216-053-00	METAL	1.5K	5%	1/10W
R141	1-216-069-00	METAL	6.8K	5%	1/10W
R142	1-216-081-00	METAL	22K	5%	1/10W
R143	1-216-081-00	METAL	22K	5%	1/10W
R144	1-216-105-00	METAL	220K	5%	1/10W
R145	1-216-067-00	METAL	5.6K	5%	1/10W
R146	1-216-055-00	METAL	1.8K	5%	1/10W
R147	1-216-057-00	METAL	2.2K	5%	1/10W
R148	1-216-057-00	METAL	2.2K	5%	1/10W
R149	1-216-063-00	METAL	3.9K	5%	1/10W
R150	1-216-057-00	METAL	2.2K	5%	1/10W
R151	1-216-043-00	METAL	560	5%	1/10W
R152	1-216-031-00	METAL	180	5%	1/10W
R153	1-216-043-91	METAL	560	5%	1/10W
R154	1-216-057-00	METAL	2.2K	5%	1/10W
R155	1-216-093-00	METAL	68K	5%	1/10W
R156	1-216-021-00	METAL	68	5%	1/10W
R157	1-216-057-00	METAL	2.2K	5%	1/10W
R158	1-216-061-00	METAL	3.3K	5%	1/10W
R159	1-216-057-00	METAL	2.2K	5%	1/10W
R160	1-216-065-00	METAL	4.7K	5%	1/10W
R161	1-216-069-00	METAL	6.8K	5%	1/10W
R162	1-216-665-11	METAL	3.9K	0.50%	1/10W
R163	1-216-049-00	METAL	1K	5%	1/10W

Ref.No	Part No.	Description			Remark
R164	1-216-073-00	METAL	10K	5%	1/10W
R165	1-216-065-00	METAL	4.7K	5%	1/10W
R166	1-216-047-00	METAL	820	5%	1/10W
R167	1-216-027-00	METAL	120	5%	1/10W
R168	1-216-073-00	METAL	10K	5%	1/10W
R169	1-216-069-00	METAL	6.8K	5%	1/10W
R171	1-216-065-00	METAL	4.7K	5%	1/10W
R172	1-216-057-00	METAL	2.2K	5%	1/10W
R173	1-216-055-00	METAL	1.8K	5%	1/10W
R177	1-216-049-00	METAL	1K	5%	1/10W
R178	1-216-049-00	METAL	1K	5%	1/10W
R179	1-216-295-11	METAL	0	5%	1/10W
R180	1-216-049-00	METAL	1K	5%	1/10W
R181	1-216-070-00	METAL	7.5K	5%	1/10W
R182	1-216-049-00	METAL	1K	5%	1/10W
R185	1-216-061-00	METAL	3.3K	5%	1/10W
R186	1-216-053-00	METAL	1.5K	5%	1/10W
R187	1-216-033-00	METAL	220	5%	1/10W
R188	1-216-057-00	METAL	2.2K	5%	1/10W
R190	1-216-057-00	METAL	2.2K	5%	1/10W
R191	1-216-057-00	METAL	2.2K	5%	1/10W
R192	1-216-049-00	METAL	1K	5%	1/10W
R194	1-216-295-11	METAL	0	5%	1/10W
R195	1-216-049-00	METAL	1K	5%	1/10W
R196	1-216-049-00	METAL	1K	5%	1/10W
R197	1-216-049-00	METAL	1K	5%	1/10W
R198	1-216-049-00	METAL	1K	5%	1/10W
R200	1-216-049-00	METAL	1K	5%	1/10W
R208	1-216-064-00	METAL	4.3K	5%	1/10W
R209	1-216-039-00	METAL	390	5%	1/10W
R210	1-216-041-00	METAL	470	5%	1/10W
R211	1-216-057-00	METAL	2.2K	5%	1/10W
R212	1-216-073-00	METAL	10K	5%	1/10W
R213	1-216-083-00	METAL	27K	5%	1/10W
R214	1-216-057-00	METAL	2.2K	5%	1/10W
R216	1-216-041-00	METAL	470	5%	1/10W
R217	1-216-032-00	METAL	200	5%	1/10W
R218	1-216-053-00	METAL	1.5K	5%	1/10W
R219	1-216-053-00	METAL	1.5K	5%	1/10W
R220	1-216-049-00	METAL	1K	5%	1/10W
R221	1-216-049-00	METAL	1K	5%	1/10W
R222	1-216-073-00	METAL	10K	5%	1/10W
R223	1-216-041-00	METAL	470	5%	1/10W
R224	1-216-049-00	METAL	1K	5%	1/10W
R225	1-216-053-00	METAL	1.5K	5%	1/10W
R226	1-216-295-11	METAL	0	5%	1/10W
R227	1-216-053-00	METAL	1.5K	5%	1/10W
R228	1-216-049-00	METAL	1K	5%	1/10W
R229	1-216-053-00	METAL	1.5K	5%	1/10W
R230	1-216-049-00	METAL	1K	5%	1/10W
R231	1-216-051-00	METAL	1.2K	5%	1/10W
R232	1-216-041-00	METAL	470	5%	1/10W
R233	1-216-061-00	METAL	3.3K	5%	1/10W
R235	1-216-053-00	METAL	1.5K	5%	1/10W
R236	1-216-053-00	METAL	1.5K	5%	1/10W
R237	1-216-049-00	METAL	1K	5%	1/10W
R238	1-216-049-00	METAL	1K	5%	1/10W
R239	1-216-033-00	METAL	220	5%	1/10W
R240	1-216-061-00	METAL	3.3K	5%	1/10W
R241	1-216-053-00	METAL	1.5K	5%	1/10W
R245	1-216-105-00	METAL	220K	5%	1/10W
R251	1-216-295-11	METAL	0	5%	1/10W
R255	1-216-041-00	METAL	470	5%	1/10W
R259	1-216-295-11	METAL	0	5%	1/10W
R260	1-216-057-00	METAL	2.2K	5%	1/10W

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Ref.No	Part No.	Description			Remark
R268	1-216-295-11	METAL	0	5%	1/10W
R280	1-216-061-00	METAL	3.3K	5%	1/10W
R281	1-216-022-00	METAL	75	5%	1/10W
R282	1-216-032-00	METAL	200	5%	1/10W
R283	1-216-053-00	METAL	1.5K	5%	1/10W
R284	1-216-689-11	METAL	39K	5%	1/10W
R285	1-216-053-00	METAL	1.5K	5%	1/10W
R288	1-216-043-00	METAL	560	5%	1/10W
R289	1-216-057-00	METAL	2.2K	5%	1/10W
R290	1-216-045-00	METAL	680	5%	1/10W
R291	1-216-045-00	METAL	680	5%	1/10W
R292	1-216-031-00	METAL	180	5%	1/10W
R293	1-216-057-00	METAL	2.2K	5%	1/10W
R294	1-216-065-00	METAL	4.7K	5%	1/10W
R301	1-216-053-00	METAL	1.5K	5%	1/10W
R302	1-216-053-00	METAL	1.5K	5%	1/10W
R303	1-216-053-00	METAL	1.5K	5%	1/10W
R304	1-216-033-00	METAL	220	5%	1/10W
R305	1-216-033-00	METAL	220	5%	1/10W
R306	1-216-057-00	METAL	2.2K	5%	1/10W
R307	1-216-057-00	METAL	2.2K	5%	1/10W
R308	1-216-061-00	METAL	3.3K	5%	1/10W
R309	1-216-065-00	METAL	4.7K	5%	1/10W
R310	1-216-065-00	METAL	4.7K	5%	1/10W
R311	1-216-061-00	METAL	3.3K	5%	1/10W
R313	1-216-033-00	METAL	220	5%	1/10W
R314	1-216-033-00	METAL	220	5%	1/10W
R315	1-216-089-00	METAL	47K	5%	1/10W
R316	1-216-033-00	METAL	220	5%	1/10W
R317	1-216-033-00	METAL	220	5%	1/10W
R318	1-216-033-00	METAL	220	5%	1/10W
R319	1-216-073-00	METAL	10K	5%	1/10W
R320	1-216-033-00	METAL	220	5%	1/10W
R321	1-216-033-00	METAL	220	5%	1/10W
R322	1-216-073-00	METAL	10K	5%	1/10W
R323	1-216-073-00	METAL	10K	5%	1/10W
R324	1-216-033-00	METAL	220	5%	1/10W
R325	1-216-073-00	METAL	10K	5%	1/10W
R326	1-216-057-00	METAL	2.2K	5%	1/10W
R327	1-216-077-00	METAL	15K	5%	1/10W
R328	1-216-033-00	METAL	220	5%	1/10W
R329	1-216-033-00	METAL	220	5%	1/10W
R330	1-216-057-00	METAL	2.2K	5%	1/10W
R331	1-216-033-00	METAL	220	5%	1/10W
R332	1-216-053-00	METAL	1.5K	5%	1/10W
R333	1-216-057-00	METAL	2.2K	5%	1/10W
R334	1-216-053-00	METAL	1.5K	5%	1/10W
R335	1-216-053-00	METAL	1.5K	5%	1/10W
R336	1-216-033-00	METAL	220	5%	1/10W
R337	1-216-073-00	METAL	10K	5%	1/10W
R338	1-216-033-00	METAL	220	5%	1/10W
R339	1-216-073-00	METAL	10K	5%	1/10W
R340	1-216-057-00	METAL	2.2K	5%	1/10W
R341	1-216-057-00	METAL	2.2K	5%	1/10W
R342	1-216-045-00	METAL	680	5%	1/10W
R343	1-216-061-00	METAL	3.3K	5%	1/10W
R344	1-216-057-00	METAL	2.2K	5%	1/10W
R345	1-216-057-00	METAL	2.2K	5%	1/10W
R346	1-216-117-00	METAL	680K	5%	1/10W
R347	1-216-073-00	METAL	10K	5%	1/10W
R348	1-216-053-00	METAL	1.5K	5%	1/10W
R349	1-216-065-00	METAL	4.7K	5%	1/10W
R350	1-216-065-00	METAL	4.7K	5%	1/10W
R351	1-216-041-00	METAL	470	5%	1/10W
R352	1-216-071-00	METAL	8.2K	5%	1/10W

Ref.No	Part No.	Description			Remark
R353	1-216-089-00	METAL	47K	5%	1/10W
R354	1-216-073-00	METAL	10K	5%	1/10W
R355	1-216-089-00	METAL	47K	5%	1/10W
R356	1-216-073-00	METAL	10K	5%	1/10W
R357	1-216-057-00	METAL	2.2K	5%	1/10W
R360	1-216-057-00	METAL	2.2K	5%	1/10W
R367	1-216-047-00	METAL	820	5%	1/10W
R370	1-216-041-00	METAL	470	5%	1/10W
R371	1-216-057-00	METAL	2.2K	5%	1/10W
R376	1-216-053-00	METAL	1.5K	5%	1/10W
R378	1-216-119-00	METAL	820K	5%	1/10W
R379	1-216-295-11	METAL	0	5%	1/10W
R380	1-216-033-00	METAL	220	5%	1/10W
R381	1-216-295-11	METAL	0	5%	1/10W
R393	1-216-043-00	METAL	560	5%	1/10W
R394	1-216-057-00	METAL	2.2K	5%	1/10W
R395	1-216-053-00	METAL	1.5K	5%	1/10W
R397	1-216-049-00	METAL	1K	5%	1/10W
R399	1-216-049-00	METAL	1K	5%	1/10W
R400	1-216-033-00	METAL	220	5%	1/10W
R401	1-216-053-00	METAL	1.5K	5%	1/10W
R402	1-216-053-00	METAL	1.5K	5%	1/10W
R403	1-216-053-00	METAL	1.5K	5%	1/10W
R406	1-216-033-00	METAL	220	5%	1/10W
R407	1-216-043-00	METAL	560	5%	1/10W
R408	1-216-057-00	METAL	2.2K	5%	1/10W
R409	1-216-053-00	METAL	1.5K	5%	1/10W
R410	1-216-049-00	METAL	1K	5%	1/10W
R413	1-216-049-00	METAL	1K	5%	1/10W
R414	1-216-033-00	METAL	220	5%	1/10W
R415	1-216-114-00	METAL	510K	5%	1/10W
R416	1-216-053-00	METAL	1.5K	5%	1/10W
R417	1-216-053-00	METAL	1.5K	5%	1/10W
R418	1-216-049-00	METAL	1K	5%	1/10W
R419	1-216-051-00	METAL	1.2K	5%	1/10W
R420	1-208-789-11	METAL	2K	0.50%	1/10W
R422	1-216-041-00	METAL	470	5%	1/10W
R424	1-216-033-00	METAL	220	5%	1/10W
R425	1-216-061-00	METAL	3.3K	5%	1/10W
R429	1-216-043-00	METAL	560	5%	1/10W
R430	1-216-057-00	METAL	2.2K	5%	1/10W
R432	1-216-057-00	METAL	2.2K	5%	1/10W
R433	1-216-053-00	METAL	1.5K	5%	1/10W
R434	1-216-075-00	METAL	12K	5%	1/10W
R435	1-216-053-00	METAL	1.5K	5%	1/10W
R436	1-216-049-00	METAL	1K	5%	1/10W
R437	1-216-049-00	METAL	1K	5%	1/10W
R439	1-216-069-00	METAL	6.8K	5%	1/10W
R441	1-216-049-00	METAL	1K	5%	1/10W
R442	1-216-033-00	METAL	220	5%	1/10W
R443	1-216-103-00	METAL	180K	5%	1/10W
R444	1-216-033-00	METAL	220	5%	1/10W
R445	1-216-025-00	METAL	100	5%	1/10W
R446	1-216-033-00	METAL	220	5%	1/10W
R447	1-216-053-00	METAL	1.5K	5%	1/10W
R448	1-216-053-00	METAL	1.5K	5%	1/10W
R449	1-216-053-00	METAL	1.5K	5%	1/10W
R450	1-216-049-00	METAL	1K	5%	1/10W
R451	1-216-049-00	METAL	1K	5%	1/10W
R452	1-216-049-00	METAL	1K	5%	1/10W
R453	1-216-033-00	METAL	220	5%	1/10W
R454	1-216-295-11	METAL	0	5%	1/10W
R455	1-216-081-00	METAL	22K	5%	1/10W
R456	1-216-081-00	METAL	22K	5%	1/10W
R457	1-216-081-00	METAL	22K	5%	1/10W

Ref.No	Part No.	Description			Remark
R458	1-216-061-00	METAL	3.3K	5%	1/10W
R459	1-216-061-00	METAL	3.3K	5%	1/10W
R460	1-216-061-00	METAL	3.3K	5%	1/10W
R461	1-216-065-00	METAL	4.7K	5%	1/10W
R462	1-216-051-00	METAL	1.2K	5%	1/10W
R463	1-216-059-00	METAL	2.7K	5%	1/10W
R464	1-216-097-00	METAL	100K	5%	1/10W
R465	1-216-049-00	METAL	1K	5%	1/10W
R466	1-216-061-00	METAL	3.3K	5%	1/10W
R467	1-216-049-00	METAL	1K	5%	1/10W
R468	1-216-065-00	METAL	4.7K	5%	1/10W
R469	1-216-081-00	METAL	22K	5%	1/10W
R470	1-216-071-00	METAL	8.2K	5%	1/10W
R471	1-216-073-00	METAL	10K	5%	1/10W
R472	1-216-053-00	METAL	1.5K	5%	1/10W
R473	1-216-295-11	METAL	0	5%	1/10W
R474	1-216-065-00	METAL	4.7K	5%	1/10W
R475	1-216-065-00	METAL	4.7K	5%	1/10W
R476	1-216-067-00	METAL	5.6K	5%	1/10W
R477	1-216-077-00	METAL	15K	5%	1/10W
R478	1-216-053-00	METAL	1.5K	5%	1/10W
R479	1-216-295-11	METAL	0	5%	1/10W
R480	1-216-295-11	METAL	0	5%	1/10W
R482	1-208-775-11	METAL	510	0.50%	1/10W
R483	1-216-033-00	METAL	220	5%	1/10W
R487	1-216-051-00	METAL	1.2K	5%	1/10W
R489	1-216-045-00	METAL	680	5%	1/10W
R490	1-216-041-00	METAL	470	5%	1/10W
R491	1-216-053-00	METAL	1.5K	5%	1/10W
R493	1-216-061-00	METAL	3.3K	5%	1/10W
R494	1-216-071-00	METAL	8.2K	5%	1/10W
R495	1-216-073-00	METAL	10K	5%	1/10W
R496	1-216-073-00	METAL	10K	5%	1/10W
R497	1-216-073-00	METAL	10K	5%	1/10W
R498	1-216-073-00	METAL	10K	5%	1/10W
R499	1-216-077-00	METAL	15K	5%	1/10W
R501	1-216-057-00	METAL	2.2K	5%	1/10W
R502	1-216-057-00	METAL	2.2K	5%	1/10W
R503	1-216-057-00	METAL	2.2K	5%	1/10W
R505	1-216-033-00	METAL	220	5%	1/10W
R506	1-216-033-00	METAL	220	5%	1/10W
R507	1-216-033-00	METAL	220	5%	1/10W
R508	1-216-033-00	METAL	220	5%	1/10W
R509	1-216-057-00	METAL	2.2K	5%	1/10W
R510	1-216-057-00	METAL	2.2K	5%	1/10W
R511	1-216-057-00	METAL	2.2K	5%	1/10W
R512	1-216-033-00	METAL	220	5%	1/10W
R514	1-216-057-00	METAL	2.2K	5%	1/10W
R515	1-216-033-00	METAL	220	5%	1/10W
R516	1-216-033-00	METAL	220	5%	1/10W
R517	1-216-033-00	METAL	220	5%	1/10W
R518	1-216-033-00	METAL	220	5%	1/10W
R519	1-216-057-00	METAL	2.2K	5%	1/10W
R520	1-216-033-00	METAL	220	5%	1/10W
R521	1-216-033-00	METAL	220	5%	1/10W
R522	1-216-057-00	METAL	2.2K	5%	1/10W
R523	1-216-057-00	METAL	2.2K	5%	1/10W
R524	1-216-057-00	METAL	2.2K	5%	1/10W
R525	1-216-295-11	METAL	0	5%	1/10W
R527	1-216-057-00	METAL	2.2K	5%	1/10W
R528	1-216-033-00	METAL	220	5%	1/10W
R529	1-216-057-00	METAL	2.2K	5%	1/10W
R530	1-216-049-00	METAL	1K	5%	1/10W
R531	1-216-057-00	METAL	2.2K	5%	1/10W
R532	1-216-049-00	METAL	1K	5%	1/10W
R534	1-216-033-00	METAL	220	5%	1/10W
R535	1-216-033-00	METAL	220	5%	1/10W
R536	1-216-033-00	METAL	220	5%	1/10W
R537	1-216-049-00	METAL	1K	5%	1/10W
R538	1-216-049-00	METAL	1K	5%	1/10W
R539	1-216-685-11	METAL	27K	0.50%	1/10W
R540	1-216-049-00	METAL	1K	5%	1/10W
R541	1-216-049-00	METAL	1K	5%	1/10W
R542	1-216-049-00	METAL	1K	5%	1/10W
R543	1-216-057-00	METAL	2.2K	5%	1/10W
R544	1-216-049-00	METAL	1K	5%	1/10W
R545	1-216-057-00	METAL	2.2K	5%	1/10W
R546	1-216-049-00	METAL	1K	5%	1/10W
R547	1-216-057-00	METAL	2.2K	5%	1/10W
R548	1-216-049-00	METAL	1K	5%	1/10W
R549	1-216-049-00	METAL	1K	5%	1/10W
R550	1-216-049-00	METAL	1K	5%	1/10W
R551	1-216-057-00	METAL	2.2K	5%	1/10W
R552	1-216-057-00	METAL	2.2K	5%	1/10W
R553	1-216-033-00	METAL	220	5%	1/10W
R554	1-216-059-00	METAL	2.7K	5%	1/10W
R555	1-216-059-00	METAL	2.7K	5%	1/10W
R556	1-216-033-00	METAL	220	5%	1/10W
R557	1-216-041-00	METAL	470	5%	1/10W
R558	1-216-041-00	METAL	470	5%	1/10W
R559	1-216-022-00	METAL	75	5%	1/10W
R560	1-216-041-00	METAL	470	5%	1/10W
R561	1-216-001-00	METAL	10	5%	1/10W
R563	1-216-001-00	METAL	10	5%	1/10W
R564	1-216-001-00	METAL	10	5%	1/10W
R565	1-216-001-00	METAL	10	5%	1/10W
R566	1-216-001-00	METAL	10	5%	1/10W
R567	1-216-001-00	METAL	10	5%	1/10W
R568	1-216-051-00	METAL	1.2K	5%	1/10W
R569	1-216-063-00	METAL	3.9K	5%	1/10W
R570	1-216-051-00	METAL	1.2K	5%	1/10W
R571	1-216-061-00	METAL	3.3K	5%	1/10W
R572	1-216-041-00	METAL	470	5%	1/10W
R573	1-216-022-00	METAL	75	5%	1/10W
R575	1-216-041-00	METAL	470	5%	1/10W
R576	1-216-041-00	METAL	470	5%	1/10W
R577	1-216-053-00	METAL	1.5K	5%	1/10W
R578	1-216-081-00	METAL	22K	5%	1/10W
R579	1-216-081-00	METAL	22K	5%	1/10W
R581	1-216-055-00	METAL	1.8K	5%	1/10W
R582	1-216-053-00	METAL	1.5K	5%	1/10W
R583	1-216-053-00	METAL	1.5K	5%	1/10W
R584	1-216-059-00	METAL	2.7K	5%	1/10W
R585	1-216-053-00	METAL	1.5K	5%	1/10W
R586	1-216-022-00	METAL	75	5%	1/10W
R587	1-216-073-00	METAL	10K	5%	1/10W
R590	1-216-037-00	METAL	330	5%	1/10W
R591	1-216-037-00	METAL	330	5%	1/10W
R601	1-216-049-00	METAL	1K	5%	1/10W
R602	1-216-063-00	METAL	3.9K	5%	1/10W
R603	1-216-059-00	METAL	2.7K	5%	1/10W
R604	1-216-051-00	METAL	1.2K	5%	1/10W
R605	1-216-047-00	METAL	820	5%	1/10W
R606	1-216-041-00	METAL	470	5%	1/10W
R607	1-216-041-00	METAL	470	5%	1/10W
R632	1-216-295-11	METAL	0	5%	1/10W
R633	1-216-295-11	METAL	0	5%	1/10W
R634	1-216-295-11	METAL	0	5%	1/10W
R901	1-216-049-00	METAL	1K	5%	1/10W
R902	1-216-049-00	METAL	1K	5%	1/10W

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Ref.No	Part No.	Description			Remark
R903	1-216-057-00	METAL	2.2K	5%	1/10W
R905	1-216-057-00	METAL	2.2K	5%	1/10W
R906	1-216-033-00	METAL	220	5%	1/10W
R907	1-216-057-00	METAL	2.2K	5%	1/10W
R908	1-216-057-00	METAL	2.2K	5%	1/10W
R910	1-216-073-00	METAL	10K	5%	1/10W
R911	1-216-073-00	METAL	10K	5%	1/10W
R915	1-216-049-00	METAL	1K	5%	1/10W
R916	1-216-057-00	METAL	2.2K	5%	1/10W
R917	1-216-049-00	METAL	1K	5%	1/10W
R934	1-216-041-00	METAL	470	5%	1/10W
R935	1-216-055-00	METAL	1.8K	5%	1/10W
R936	1-216-055-00	METAL	1.8K	5%	1/10W
R937	1-216-045-00	METAL	680	5%	1/10W
R938	1-216-045-00	METAL	680	5%	1/10W
R939	1-216-041-00	METAL	470	5%	1/10W
R941	1-216-295-11	METAL	0	5%	1/10W
R943	1-216-295-11	METAL	0	5%	1/10W
R945	1-216-295-11	METAL	0	5%	1/10W
R950	1-216-041-00	METAL	470	5%	1/10W
R951	1-216-097-00	METAL	100K	5%	1/10W
R952	1-216-065-00	METAL	4.7K	5%	1/10W
R954	1-216-065-00	METAL	4.7K	5%	1/10W
R955	1-216-295-11	METAL	0	5%	1/10W
R956	1-216-295-11	METAL	0	5%	1/10W
R957	1-216-295-11	METAL	0	5%	1/10W
R960	1-216-059-00	METAL	2.7K	5%	1/10W
R982	1-216-049-00	METAL	1K	5%	1/10W
R983	1-216-049-00	METAL	1K	5%	1/10W
R984	1-216-049-00	METAL	1K	5%	1/10W
		<VARIABLE RESISTOR>			
RV301	1-238-852-11	RES, ADJ, CERMET 470			
RV302	1-238-852-11	RES, ADJ, CERMET 470			
RV303	1-238-852-11	RES, ADJ, CERMET 470			
RV304	1-238-852-11	RES, ADJ, CERMET 470			
		<CRYSTAL>			
X101	1-579-738-21	VIBRATOR, CRYSTAL			
X301	1-579-466-11	VIBRATOR, CRYSTAL			
**********					
	*A-8274-835-A	VA-76(B)BOARD, COMPLETE (UP-1200AEPM)			
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		<CAPACITOR>			
C101	1-163-038-91	CERAMIC	0.1uF		25V
C102	1-164-004-11	CERAMIC	0.1uF	10%	25V
C103	1-124-778-00	ELECT	22uF	20%	6.3V
C104	1-163-038-91	CERAMIC	0.1uF		25V
C106	1-164-346-11	CERAMIC	1uF		16V
C107	1-163-275-11	CERAMIC	0.001uF	5%	50V
C108	1-126-217-11	ELECT	15uF	20%	10V
C109	1-163-038-91	CERAMIC	0.1uF		25V
C110	1-163-110-00	CERAMIC	51PF	5%	50V
C111	1-163-097-00	CERAMIC	15PF	5%	50V
C112	1-163-253-11	CERAMIC	120PF	5%	50V
C114	1-163-275-11	CERAMIC	0.001uF	5%	50V
C115	1-124-778-00	ELECT	22uF	20%	6.3V
C116	1-163-038-91	CERAMIC	0.1uF		25V
C117	1-126-217-11	ELECT	15uF	20%	10V
C118	1-163-038-91	CERAMIC	0.1uF		25V
C119	1-163-038-91	CERAMIC	0.1uF		25V
C120	1-163-141-00	CERAMIC	0.001uF	5%	50V
C121	1-163-141-00	CERAMIC	0.001uF	5%	50V
C122	1-163-141-00	CERAMIC	0.001uF	5%	50V

Ref.No	Part No.	Description			Remark
C123	1-163-239-11	CERAMIC	33PF	5%	50V
C124	1-163-099-00	CERAMIC	18PF	5%	50V
C125	1-164-004-11	CERAMIC	0.1uF	10%	25V
C126	1-163-141-00	CERAMIC	0.001uF	5%	50V
C127	1-163-038-91	CERAMIC	0.1uF		25V
C128	1-163-275-11	CERAMIC	0.001uF	5%	50V
C129	1-163-275-11	CERAMIC	0.001uF	5%	50V
C130	1-163-257-11	CERAMIC	180PF	5%	50V
C131	1-126-217-11	ELECT	15uF	20%	10V
C132	1-163-038-91	CERAMIC	0.1uF		25V
C133	1-163-275-11	CERAMIC	0.001uF	5%	50V
C134	1-165-320-11	CERAMIC	0.47uF	10%	16V
C135	1-126-217-11	ELECT	15uF	20%	10V
C136	1-163-038-91	CERAMIC	0.1uF		25V
C137	1-164-182-11	CERAMIC	0.0033uF	10%	50V
C138	1-163-251-11	CERAMIC	100PF	5%	50V
C139	1-163-038-91	CERAMIC	0.1uF		25V
C140	1-163-038-91	CERAMIC	0.1uF		25V
C141	1-164-004-11	CERAMIC	0.1uF	10%	25V
C143	1-126-217-11	ELECT	15uF	20%	10V
C144	1-163-275-11	CERAMIC	0.001uF	5%	50V
C145	1-164-232-11	CERAMIC	0.01uF	10%	50V
C146	1-164-232-11	CERAMIC	0.01uF	10%	50V
C147	1-164-004-11	CERAMIC	0.1uF	10%	25V
C148	1-163-275-11	CERAMIC	0.001uF	5%	50V
C149	1-164-004-11	CERAMIC	0.1uF	10%	25V
C150	1-164-346-11	CERAMIC	1uF		16V
C151	1-163-038-91	CERAMIC	0.1uF		25V
C152	1-163-251-11	CERAMIC	100PF	5%	50V
C153	1-126-217-11	ELECT	15uF	20%	10V
C154	1-163-038-91	CERAMIC	0.1uF		25V
C155	1-163-038-91	CERAMIC	0.1uF		25V
C156	1-163-038-91	CERAMIC	0.1uF		25V
C157	1-126-217-11	ELECT	15uF	20%	10V
C158	1-164-346-11	CERAMIC	1uF		16V
C159	1-163-038-91	CERAMIC	0.1uF		25V
C160	1-128-065-11	ELECT	68uF	20%	10V
C161	1-126-206-11	ELECT	100uF	20%	6.3V
C162	1-163-038-91	CERAMIC	0.1uF		25V
C163	1-128-065-11	ELECT	68uF	20%	10V
C164	1-126-206-11	ELECT	100uF	20%	6.3V
C165	1-163-038-91	CERAMIC	0.1uF		25V
C166	1-126-217-11	ELECT	15uF	20%	10V
C167	1-163-241-11	CERAMIC	39PF	5%	50V
C168	1-163-243-11	CERAMIC	47PF	5%	50V
C169	1-163-038-91	CERAMIC	0.1uF		25V
C173	1-163-038-91	CERAMIC	0.1uF		25V
C175	1-163-038-91	CERAMIC	0.1uF		25V
C176	1-126-217-11	ELECT	15uF	20%	10V
C177	1-163-038-91	CERAMIC	0.1uF		25V
C180	1-163-141-00	CERAMIC	0.001uF	5%	50V
C181	1-163-099-00	CERAMIC	18PF	5%	50V
C182	1-163-038-91	CERAMIC	0.1uF		25V
C183	1-163-038-91	CERAMIC	0.1uF		25V
C185	1-163-038-91	CERAMIC	0.1uF		25V
C187	1-163-038-91	CERAMIC	0.1uF		25V
C188	1-164-232-11	CERAMIC	0.01uF	10%	50V
C190	1-163-017-00	CERAMIC	0.0047uF	10%	50V
C191	1-163-137-00	CERAMIC	680PF	5%	50V
C192	1-164-232-11	CERAMIC	0.01uF	10%	50V
C193	1-126-217-11	ELECT	15uF	20%	10V
C194	1-164-232-11	CERAMIC	0.01uF	10%	50V
C195	1-126-217-11	ELECT	15uF	20%	10V
C196	1-164-232-11	CERAMIC	0.01uF	10%	50V
C197	1-164-232-11	CERAMIC	0.01uF	10%	50V

Ref.No	Part No.	Description			Remark
C199	1-126-217-11	ELECT	15uF	20%	10V
C200	1-126-217-11	ELECT	15uF	20%	10V
C201	1-163-141-00	CERAMIC	0.001uF	5%	50V
C202	1-126-603-11	ELECT	4.7uF	20%	35V
C205	1-163-038-91	CERAMIC	0.1uF		25V
C206	1-164-005-11	CERAMIC	0.47uF		25V
C207	1-163-038-91	CERAMIC	0.1uF		25V
C209	1-126-217-11	ELECT	15uF	20%	10V
C210	1-164-005-11	CERAMIC	0.47uF		25V
C211	1-164-005-11	CERAMIC	0.47uF		25V
C212	1-163-038-91	CERAMIC	0.1uF		25V
C213	1-126-217-11	ELECT	15uF	20%	10V
C214	1-163-038-91	CERAMIC	0.1uF		25V
C215	1-164-005-11	CERAMIC	0.47uF		25V
C216	1-126-193-11	ELECT	1uF	20%	50V
C217	1-164-005-11	CERAMIC	0.47uF		25V
C218	1-163-235-11	CERAMIC	22PF	5%	50V
C220	1-164-005-11	CERAMIC	0.47uF		25V
C221	1-164-005-11	CERAMIC	0.47uF		25V
C223	1-164-005-11	CERAMIC	0.47uF		25V
C224	1-164-005-11	CERAMIC	0.47uF		25V
C225	1-126-217-11	ELECT	15uF	20%	10V
C226	1-163-038-91	CERAMIC	0.1uF		25V
C227	1-164-005-11	CERAMIC	0.47uF		25V
C228	1-163-251-11	CERAMIC	100PF	5%	50V
C230	1-163-038-91	CERAMIC	0.1uF		25V
C233	1-163-133-00	CERAMIC	470PF	5%	50V
C250	1-163-127-00	CERAMIC	270PF	5%	50V
C251	1-163-110-00	CERAMIC	51PF	5%	50V
C252	1-126-217-11	ELECT	15uF	20%	10V
C260	1-164-004-11	CERAMIC	0.1uF	10%	25V
C261	1-163-097-00	CERAMIC	15PF	5%	50V
C262	1-163-141-00	CERAMIC	0.001uF	5%	50V
C263	1-163-141-00	CERAMIC	0.001uF	5%	50V
C270	1-135-337-11	TANTAL	1uF	10%	6.3V
C271	1-126-217-11	ELECT	15uF	20%	10V
C281	1-126-207-11	ELECT	33uF	20%	4V
C282	1-126-217-11	ELECT	15uF	20%	10V
C285	1-164-005-11	CERAMIC	0.47uF		25V
C286	1-164-005-11	CERAMIC	0.47uF		25V
C290	1-164-005-11	CERAMIC	0.47uF		25V
C291	1-164-005-11	CERAMIC	0.47uF		25V
C295	1-164-004-11	CERAMIC	0.1uF	10%	25V
C301	1-126-217-11	ELECT	15uF	20%	10V
C302	1-163-038-91	CERAMIC	0.1uF		25V
C303	1-163-077-00	CERAMIC	0.1uF	10%	25V
C304	1-163-077-00	CERAMIC	0.1uF	10%	25V
C305	1-163-038-91	CERAMIC	0.1uF		25V
C306	1-164-004-11	CERAMIC	0.1uF	10%	25V
C307	1-126-217-11	ELECT	15uF	20%	10V
C308	1-164-346-11	CERAMIC	1uF		16V
C309	1-126-217-11	ELECT	15uF	20%	10V
C310	1-163-038-91	CERAMIC	0.1uF		25V
C311	1-163-038-91	CERAMIC	0.1uF		25V
C312	1-126-217-11	ELECT	15uF	20%	10V
C313	1-163-038-91	CERAMIC	0.1uF		25V
C314	1-126-217-11	ELECT	15uF	20%	10V
C315	1-126-217-11	ELECT	15uF	20%	10V
C316	1-126-217-11	ELECT	15uF	20%	10V
C317	1-126-217-11	ELECT	15uF	20%	10V
C318	1-126-217-11	ELECT	15uF	20%	10V
C319	1-163-038-91	CERAMIC	0.1uF		25V
C320	1-164-346-11	CERAMIC	1uF		16V
C321	1-126-217-11	ELECT	15uF	20%	10V
C322	1-126-217-11	ELECT	15uF	20%	10V

Ref.No	Part No.	Description			Remark
C323	1-163-038-91	CERAMIC	0.1uF		25V
C324	1-163-038-91	CERAMIC	0.1uF		25V
C325	1-163-117-00	CERAMIC	100PF	5%	50V
C326	1-163-117-00	CERAMIC	100PF	5%	50V
C327	1-126-193-11	ELECT	1uF	20%	50V
C328	1-163-141-00	CERAMIC	0.001uF	5%	50V
C329	1-164-004-11	CERAMIC	0.1uF	10%	25V
C330	1-164-005-11	CERAMIC	0.47uF		25V
C331	1-164-004-11	CERAMIC	0.1uF	10%	25V
C332	1-163-038-91	CERAMIC	0.1uF		25V
C333	1-164-232-11	CERAMIC	0.01uF	10%	50V
C334	1-164-004-11	CERAMIC	0.1uF	10%	25V
C335	1-126-217-11	ELECT	15uF	20%	10V
C336	1-163-038-91	CERAMIC	0.1uF		25V
C337	1-163-227-11	CERAMIC	10PF		50V
C338	1-164-004-11	CERAMIC	0.1uF	10%	25V
C339	1-126-217-11	ELECT	15uF	20%	10V
C340	1-163-038-91	CERAMIC	0.1uF		25V
C341	1-126-217-11	ELECT	15uF	20%	10V
C342	1-163-038-91	CERAMIC	0.1uF		25V
C343	1-126-217-11	ELECT	15uF	20%	10V
C344	1-163-038-91	CERAMIC	0.1uF		25V
C345	1-126-217-11	ELECT	15uF	20%	10V
C346	1-163-038-91	CERAMIC	0.1uF		25V
C347	1-163-227-11	CERAMIC	10PF		50V
C348	1-164-004-11	CERAMIC	0.1uF	10%	25V
C349	1-128-065-11	ELECT	68uF	20%	10V
C350	1-163-038-91	CERAMIC	0.1uF		25V
C351	1-126-217-11	ELECT	15uF	20%	10V
C352	1-163-038-91	CERAMIC	0.1uF		25V
C353	1-163-809-11	CERAMIC	0.047uF	10%	25V
C354	1-163-037-11	CERAMIC	0.022uF	10%	25V
C355	1-163-038-91	CERAMIC	0.1uF		25V
C356	1-163-809-11	CERAMIC	0.047uF	10%	25V
C357	1-107-682-11	CERAMIC	1uF	10%	16V
C358	1-164-004-11	CERAMIC	0.1uF	10%	25V
C359	1-126-193-11	ELECT	1uF	20%	50V
C360	1-163-106-00	CERAMIC	36PF	5%	50V
C362	1-164-005-11	CERAMIC	0.47uF		25V
C363	1-128-065-11	ELECT	68uF	20%	10V
C364	1-163-038-91	CERAMIC	0.1uF		25V
C366	1-163-235-11	CERAMIC	22PF	5%	50V
C367	1-126-217-11	ELECT	15uF	20%	10V
C368	1-163-038-91	CERAMIC	0.1uF		25V
C369	1-126-217-11	ELECT	15uF	20%	10V
C370	1-163-038-91	CERAMIC	0.1uF		25V
C371	1-164-004-11	CERAMIC	0.1uF	10%	25V
C372	1-126-193-11	ELECT	1uF	20%	50V
C373	1-163-227-11	CERAMIC	10PF		50V
C374	1-164-004-11	CERAMIC	0.1uF	10%	25V
C375	1-163-038-91	CERAMIC	0.1uF		25V
C376	1-164-232-11	CERAMIC	0.01uF	10%	50V
C377	1-135-145-11	TANTAL	0.47uF	20%	25V
C378	1-126-217-11	ELECT	15uF	20%	10V
C379	1-163-038-91	CERAMIC	0.1uF		25V
C380	1-126-217-11	ELECT	15uF	20%	10V
C381	1-163-245-11	CERAMIC	56PF	5%	50V
C382	1-135-210-11	TANTAL	4.7uF	10%	10V
C383	1-163-038-91	CERAMIC	0.1uF		25V
C384	1-163-038-91	CERAMIC	0.1uF		25V
C385	1-163-038-91	CERAMIC	0.1uF		25V
C386	1-164-232-11	CERAMIC	0.01uF	10%	50V
C387	1-163-038-91	CERAMIC	0.1uF		25V
C388	1-126-217-11	ELECT	15uF	20%	10V
C389	1-163-038-91	CERAMIC	0.1uF		25V

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Ref.No	Part No.	Description			Remark
C390	1-163-038-91	CERAMIC	0.1uF		25V
C391	1-163-099-00	CERAMIC	18PF	5%	50V
C393	1-163-038-91	CERAMIC	0.1uF		25V
C394	1-128-065-11	ELECT	68uF	20%	10V
C395	1-163-038-91	CERAMIC	0.1uF		25V
C396	1-126-217-11	ELECT	15uF	20%	10V
C397	1-164-232-11	CERAMIC	0.01uF	10%	50V
C398	1-163-038-91	CERAMIC	0.1uF		25V
C399	1-164-004-11	CERAMIC	0.1uF	10%	25V
C400	1-164-005-11	CERAMIC	0.47uF		25V
C401	1-164-004-11	CERAMIC	0.1uF	10%	25V
C402	1-164-004-11	CERAMIC	0.1uF	10%	25V
C404	1-163-038-91	CERAMIC	0.1uF		25V
C410	1-163-243-11	CERAMIC	47PF	5%	50V
C482	1-163-251-11	CERAMIC	100PF	5%	50V
C490	1-163-227-11	CERAMIC	10PF		50V
C499	1-163-235-11	CERAMIC	22PF	5%	50V
C501	1-126-217-11	ELECT	15uF	20%	10V
C502	1-163-038-91	CERAMIC	0.1uF		25V
C503	1-163-038-91	CERAMIC	0.1uF		25V
C504	1-126-217-11	ELECT	15uF	20%	10V
C505	1-163-239-11	CERAMIC	33PF	5%	50V
C506	1-163-239-11	CERAMIC	33PF	5%	50V
C507	1-163-038-91	CERAMIC	0.1uF		25V
C508	1-163-038-91	CERAMIC	0.1uF		25V
C509	1-126-217-11	ELECT	15uF	20%	10V
C512	1-163-038-91	CERAMIC	0.1uF		25V
C513	1-164-005-11	CERAMIC	0.47uF		25V
C514	1-163-038-91	CERAMIC	0.1uF		25V
C515	1-163-038-91	CERAMIC	0.1uF		25V
C516	1-126-217-11	ELECT	15uF	20%	10V
C517	1-163-038-91	CERAMIC	0.1uF		25V
C518	1-164-232-11	CERAMIC	0.01uF	10%	50V
C519	1-164-232-11	CERAMIC	0.01uF	10%	50V
C520	1-163-809-11	CERAMIC	0.047uF	10%	25V
C521	1-163-809-11	CERAMIC	0.047uF	10%	25V
C522	1-163-809-11	CERAMIC	0.047uF	10%	25V
C523	1-164-232-11	CERAMIC	0.01uF	10%	50V
C524	1-164-005-11	CERAMIC	0.47uF		25V
C525	1-126-217-11	ELECT	15uF	20%	10V
C526	1-126-217-11	ELECT	15uF	20%	10V
C527	1-163-038-91	CERAMIC	0.1uF		25V
C528	1-163-038-91	CERAMIC	0.1uF		25V
C529	1-163-038-91	CERAMIC	0.1uF		25V
C530	1-126-217-11	ELECT	15uF	20%	10V
C531	1-163-038-91	CERAMIC	0.1uF		25V
C532	1-126-217-11	ELECT	15uF	20%	10V
C533	1-163-038-91	CERAMIC	0.1uF		25V
C534	1-126-217-11	ELECT	15uF	20%	10V
C535	1-163-038-91	CERAMIC	0.1uF		25V
C536	1-164-005-11	CERAMIC	0.47uF		25V
C537	1-164-005-11	CERAMIC	0.47uF		25V
C538	1-126-217-11	ELECT	15uF	20%	10V
C539	1-164-232-11	CERAMIC	0.01uF	10%	50V
C540	1-164-232-11	CERAMIC	0.01uF	10%	50V
C541	1-164-232-11	CERAMIC	0.01uF	10%	50V
C543	1-163-235-11	CERAMIC	22PF	5%	50V
C544	1-164-004-11	CERAMIC	0.1uF	10%	25V
C545	1-126-217-11	ELECT	15uF	20%	10V
C546	1-163-038-91	CERAMIC	0.1uF		25V
C547	1-163-038-91	CERAMIC	0.1uF		25V
C570	1-163-038-91	CERAMIC	0.1uF		25V
C571	1-126-217-11	ELECT	15uF	20%	10V
C572	1-126-217-11	ELECT	15uF	20%	10V
C801	1-164-004-11	CERAMIC	0.1uF	10%	25V

Ref.No	Part No.	Description			Remark
C901	1-163-239-11	CERAMIC	33PF	5%	50V
C902	1-163-239-11	CERAMIC	33PF	5%	50V
C903	1-163-239-11	CERAMIC	33PF	5%	50V
C910	1-135-210-11	TANTAL	4.7uF	10%	10V
C911	1-135-210-11	TANTAL	4.7uF	10%	10V
C950	1-163-127-00	CERAMIC	270PF	5%	50V
C951	1-163-239-11	CERAMIC	33PF	5%	50V
C990	1-126-217-11	ELECT	15uF	20%	10V
		<CONNECTOR>			
CN101	1-565-212-11	CONNECTOR, FPC (ZIF) 26P			
CN102	1-565-212-11	CONNECTOR, FPC (ZIF) 26P			
CN105	*1-560-892-00	PIN, CONNECTOR 4P			
CN110	1-506-472-11	PIN, CONNECTOR 7P			
CN502	1-506-471-11	PIN, CONNECTOR 6P			
		<TRIMMER>			
CT101	1-141-423-61	CAP, ADJ			
CT102	1-141-423-61	CAP, ADJ			
CT103	1-141-373-11	CAP, CHIP TRIMMER			
		<DIODE>			
D101	8-719-002-81	DIODE 1T363A			
D109	8-719-820-41	DIODE 1SS302			
D110	8-719-820-41	DIODE 1SS302			
D120	8-719-002-81	DIODE 1T363A			
D125	8-719-024-82	DIODE 1SS300			
D126	8-719-421-27	DIODE MA728			
D301	8-719-820-41	DIODE 1SS302			
D302	8-719-820-41	DIODE 1SS302			
D310	8-719-820-41	DIODE 1SS302			
D311	8-719-820-41	DIODE 1SS302			
D312	8-719-820-41	DIODE 1SS302			
D313	8-719-820-41	DIODE 1SS302			
D503	8-719-820-41	DIODE 1SS302			
D508	8-719-820-41	DIODE 1SS302			
D509	8-719-820-41	DIODE 1SS302			
D910	8-719-025-18	DIODE 02CZ2.0-TE85L			
D911	8-719-025-18	DIODE 02CZ2.0-TE85L			
D912	8-719-025-18	DIODE 02CZ2.0-TE85L			
		<DELAY LINE>			
DL301	1-406-516-11	DELAY LINE, LC (140NS) (EQ)			
DL302	1-239-565-11	FILTER, LOW PASS			
DL303	1-403-694-11	COIL			
		<FERRITE, BEAD>			
FB108	1-412-390-21	INDUCTOR CHIP 0UH			
FB109	1-412-390-21	INDUCTOR CHIP 0UH			
FB112	1-412-390-21	INDUCTOR CHIP 0UH			
FB121	1-412-390-21	INDUCTOR CHIP 0UH			
FB122	1-412-390-21	INDUCTOR CHIP 0UH			
FB123	1-412-390-21	INDUCTOR CHIP 0UH			
FB304	1-412-390-21	INDUCTOR CHIP 0UH			
FB305	1-412-390-21	INDUCTOR CHIP 0UH			
FB306	1-412-390-21	INDUCTOR CHIP 0UH			
FB307	1-412-390-21	INDUCTOR CHIP 0UH			
FB308	1-412-390-21	INDUCTOR CHIP 0UH			
FB309	1-412-390-21	INDUCTOR CHIP 0UH			
FB310	1-412-390-21	INDUCTOR CHIP 0UH			
FB311	1-412-390-21	INDUCTOR CHIP 0UH			
FB312	1-412-390-21	INDUCTOR CHIP 0UH			
FB313	1-412-390-21	INDUCTOR CHIP 0UH			
FB314	1-412-390-21	INDUCTOR CHIP 0UH			
FB315	1-412-390-21	INDUCTOR CHIP 0UH			

Ref.No	Part No.	Description	Remark
FB316	1-412-390-21	INDUCTOR CHIP 0UH	
FB317	1-412-390-21	INDUCTOR CHIP 0UH	
FB318	1-412-390-21	INDUCTOR CHIP 0UH	
FB319	1-412-390-21	INDUCTOR CHIP 0UH	
FB320	1-412-390-21	INDUCTOR CHIP 0UH	
FB321	1-412-390-21	INDUCTOR CHIP 0UH	
FB322	1-412-390-21	INDUCTOR CHIP 0UH	
FB323	1-412-390-21	INDUCTOR CHIP 0UH	
FB324	1-412-390-21	INDUCTOR CHIP 0UH	
FB325	1-412-390-21	INDUCTOR CHIP 0UH	
FB327	1-412-390-21	INDUCTOR CHIP 0UH	
FB328	1-412-390-21	INDUCTOR CHIP 0UH	
FB329	1-412-390-21	INDUCTOR CHIP 0UH	
FB330	1-412-390-21	INDUCTOR CHIP 0UH	
FB331	1-412-390-21	INDUCTOR CHIP 0UH	
FB332	1-412-390-21	INDUCTOR CHIP 0UH	
FB334	1-412-390-21	INDUCTOR CHIP 0UH	
FB335	1-412-390-21	INDUCTOR CHIP 0UH	
FB336	1-412-390-21	INDUCTOR CHIP 0UH	
FB337	1-412-390-21	INDUCTOR CHIP 0UH	
FB338	1-412-390-21	INDUCTOR CHIP 0UH	
FB339	1-412-390-21	INDUCTOR CHIP 0UH	
FB340	1-412-390-21	INDUCTOR CHIP 0UH	
FB343	1-412-390-21	INDUCTOR CHIP 0UH	
FB344	1-412-390-21	INDUCTOR CHIP 0UH	
FB345	1-412-390-21	INDUCTOR CHIP 0UH	
FB346	1-412-390-21	INDUCTOR CHIP 0UH	
FB347	1-412-390-21	INDUCTOR CHIP 0UH	
FB348	1-412-390-21	INDUCTOR CHIP 0UH	
FB349	1-412-390-21	INDUCTOR CHIP 0UH	
FB510	1-412-390-21	INDUCTOR CHIP 0UH	
FB511	1-412-390-21	INDUCTOR CHIP 0UH	
FB512	1-412-390-21	INDUCTOR CHIP 0UH	
FB920	1-412-390-21	INDUCTOR CHIP 0UH	
FB921	1-412-390-21	INDUCTOR CHIP 0UH	
FB922	1-412-390-21	INDUCTOR CHIP 0UH	
		<FILTER>	
FL102	1-236-388-11	FILTER, EMI	
FL103	1-236-388-11	FILTER, EMI	
FL104	1-236-388-11	FILTER, EMI	
FL105	1-236-388-11	FILTER, EMI	
FL106	1-236-388-11	FILTER, EMI	
FL107	1-236-388-11	FILTER, EMI	
FL201	1-239-839-11	FILTER, LOW PASS	
FL202	1-236-265-11	FILTER, BAND PASS	
FL203	1-239-564-11	FILTER, LOW PASS	
FL301	1-239-564-11	FILTER, LOW PASS	
FL304	1-406-515-11	DELAY LINE, LC	
FL501	1-239-563-11	FILTER, LOW PASS	
FL502	1-239-563-11	FILTER, LOW PASS	
FL503	1-239-563-11	FILTER, LOW PASS	
FL504	1-239-564-11	FILTER, LOW PASS	
FL505	1-236-265-11	FILTER, BAND PASS	
		<IC>	
IC101	8-759-079-66	IC TC74VHC123AFS	
IC102	8-759-105-49	IC UPC319G2	
IC103	8-759-085-67	IC LM339NS	
IC104	8-759-996-43	IC RC4558PS	
IC106	8-759-710-12	IC NJM2230M	
IC107	8-752-326-08	IC CXD1159Q	
IC108	8-759-907-81	IC SN74LS221NS	

Ref.No	Part No.	Description	Remark
IC109	8-759-242-70	IC TC7WU04F	
IC110	8-759-907-81	IC SN74LS221NS	
IC111	8-759-981-48	IC TL082CPS	
IC112	8-759-011-65	IC MC74HC4053F	
IC113	8-759-157-22	IC PQ06TZ1U	
IC114	8-759-157-17	IC PQ05SZ1U	
IC119	8-759-097-87	IC MB621948	
IC121	8-752-372-78	IC CXD2024AQ	
IC122	8-759-710-86	IC NJM2233BM	
IC123	8-759-710-07	IC NJM2234M	
IC125	8-759-710-86	IC NJM2233BM	
IC126	8-759-242-64	IC TC4W53F	
IC128	8-759-242-72	IC TC7W00F	
IC130	8-752-341-58	IC CXD1217Q	
IC150	8-759-242-76	IC TC7W08F	
IC301	8-752-054-80	IC CXA1521M	
IC302	8-759-011-65	IC MC74HC4053F	
IC303	8-759-060-00	IC BA10324AF	
IC304	8-759-060-00	IC BA10324AF	
IC306	8-759-105-49	IC UPC319G2	
IC307	8-759-635-27	IC M62352GP	
IC308	8-759-635-27	IC M62352GP	
IC309	8-759-278-57	IC AK6420HF-E2	
IC310	8-752-340-25	IC CXL5505M	
IC311	8-752-058-96	IC CXA1585Q	
IC312	8-759-929-26	IC TL431CPS	
IC313	8-759-745-64	IC NJM4560M	
IC314	8-759-060-00	IC BA10324AF	
IC320	8-759-745-64	IC NJM4560M	
IC501	8-759-011-65	IC MC74HC4053F	
IC504	8-759-254-98	IC M50555-218FP-TE2	
IC506	8-752-033-07	IC CXA1145M	
IC507	8-752-053-21	IC CXA1211M	
IC508	8-759-710-86	IC NJM2233BM	
IC511	8-752-053-21	IC CXA1211M	
		<JACK>	
J101	1-565-276-21	JACK, ULTRA SMALL 1P	
		<INDUCTOR>	
L101	1-410-389-31	INDUCTOR CHIP 47UH	
L102	1-410-388-31	INDUCTOR CHIP 39UH	
L103	1-412-137-11	INDUCTOR 10UH	
L110	1-410-200-31	INDUCTOR CHIP 4.7UH	
L120	1-410-385-11	INDUCTOR CHIP 22UH	
L130	1-410-385-11	INDUCTOR CHIP 22UH	
L140	1-410-385-11	INDUCTOR CHIP 22UH	
L141	1-410-385-11	INDUCTOR CHIP 22UH	
L301	1-410-377-31	INDUCTOR CHIP 4.7UH	
L302	1-410-389-31	INDUCTOR CHIP 47UH	
L303	1-410-388-31	INDUCTOR CHIP 39UH	
L350	1-410-377-31	INDUCTOR CHIP 4.7UH	
L501	1-410-384-31	INDUCTOR CHIP 18UH	
L901	1-410-730-11	INDUCTOR CHIP 0.12UH	
L902	1-410-730-11	INDUCTOR CHIP 0.12UH	
L903	1-410-730-11	INDUCTOR CHIP 0.12UH	
L904	1-412-188-11	INDUCTOR 22UH	
L905	1-412-188-11	INDUCTOR 22UH	
		<FILTER>	
LF101	1-424-090-11	COIL, LINE FILTER	
LF102	1-424-090-11	COIL, LINE FILTER	
LF106	1-424-090-11	COIL, LINE FILTER	

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Ref.No	Part No.	Description	Remark
		<TRANSISTOR>	
Q101	8-729-230-60	TRANSISTOR 2SA1586-YG	
Q102	8-729-230-60	TRANSISTOR 2SA1586-YG	
Q103	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q104	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q105	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q106	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q108	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q109	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q110	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q111	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q112	8-729-230-60	TRANSISTOR 2SA1586-YG	
Q113	8-729-402-87	TRANSISTOR XN2401	
Q116	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q117	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q118	8-729-402-84	TRANSISTOR XN4601-TW	
Q119	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q120	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q121	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q122	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q123	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L	
Q124	8-729-402-84	TRANSISTOR XN4601	
Q125	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q126	8-729-402-84	TRANSISTOR XN4601	
Q170	8-729-230-60	TRANSISTOR 2SA1586-YG	
Q171	8-729-013-88	TRANSISTOR RN1302-TE85L	
Q301	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L	
Q302	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q303	8-729-402-84	TRANSISTOR XN4601	
Q304	8-729-402-84	TRANSISTOR XN4601	
Q305	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q306	8-729-230-60	TRANSISTOR 2SA1586-YG	
Q307	8-729-232-66	TRANSISTOR 2SA1618-YGRTE85L	
Q308	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q309	8-729-402-81	TRANSISTOR XN4501	
Q310	8-729-230-60	TRANSISTOR 2SA1586-YG	
Q311	8-729-402-81	TRANSISTOR XN4501	
Q312	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q316	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q320	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q321	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L	
Q322	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q323	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q324	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L	
Q326	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q328	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q329	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q330	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L	
Q331	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q334	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q335	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L	
Q336	8-729-230-60	TRANSISTOR 2SA1586-YG	
Q350	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q360	8-729-402-84	TRANSISTOR XN4601	
Q361	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q400	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q501	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q502	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q503	8-729-230-60	TRANSISTOR 2SA1586-YG	
Q504	8-729-230-60	TRANSISTOR 2SA1586-YG	
Q505	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q506	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q507	8-729-232-66	TRANSISTOR 2SA1618-YGRTE85L	
Q508	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q509	8-729-232-66	TRANSISTOR 2SA1618-YGRTE85L	
Q510	8-729-232-66	TRANSISTOR 2SA1618-YGRTE85L	
Q511	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q512	8-729-230-60	TRANSISTOR 2SA1586-YG	
Q513	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q514	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q515	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q516	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q517	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q518	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q519	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q520	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q521	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q522	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q523	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q525	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q526	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q527	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q528	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L	
Q529	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L	
Q530	8-729-230-60	TRANSISTOR 2SA1586-YG	
Q531	8-729-230-60	TRANSISTOR 2SA1586-YG	
Q532	8-729-230-60	TRANSISTOR 2SA1586-YG	
Q540	8-729-014-86	TRANSISTOR 2SC4207-YGRTE85L	
Q901	8-729-230-60	TRANSISTOR 2SA1586-YG	
Q902	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q910	8-729-230-60	TRANSISTOR 2SA1586-YG	
		<REGISTOR>	
R101	1-216-051-00	METAL 1.2K 5% 1/10W	
R102	1-216-053-00	METAL 1.5K 5% 1/10W	
R103	1-216-053-00	METAL 1.5K 5% 1/10W	
R104	1-216-113-00	METAL 470K 5% 1/10W	
R105	1-216-057-00	METAL 2.2K 5% 1/10W	
R106	1-216-057-00	METAL 2.2K 5% 1/10W	
R107	1-216-065-00	METAL 4.7K 5% 1/10W	
R108	1-216-057-00	METAL 2.2K 5% 1/10W	
R109	1-216-057-00	METAL 2.2K 5% 1/10W	
R110	1-216-053-00	METAL 1.5K 5% 1/10W	
R111	1-216-075-00	METAL 12K 5% 1/10W	
R112	1-216-001-00	METAL 10 5% 1/10W	
R113	1-216-057-00	METAL 2.2K 5% 1/10W	
R114	1-216-065-00	METAL 4.7K 5% 1/10W	
R115	1-216-057-00	METAL 2.2K 5% 1/10W	
R116	1-216-081-00	METAL 22K 5% 1/10W	
R117	1-216-049-00	METAL 1K 5% 1/10W	
R118	1-216-075-00	METAL 12K 5% 1/10W	
R119	1-216-073-00	METAL 10K 5% 1/10W	
R120	1-216-075-00	METAL 12K 5% 1/10W	
R121	1-216-035-00	METAL 270 5% 1/10W	
R122	1-216-295-11	METAL 0 5% 1/10W	
R123	1-216-049-00	METAL 1K 5% 1/10W	
R124	1-216-065-00	METAL 4.7K 5% 1/10W	
R125	1-216-033-00	METAL 220 5% 1/10W	
R127	1-216-037-00	METAL 330 5% 1/10W	
R128	1-216-085-00	METAL 33K 5% 1/10W	
R129	1-216-069-00	METAL 6.8K 5% 1/10W	
R130	1-216-083-00	METAL 27K 5% 1/10W	
R131	1-216-073-00	METAL 10K 5% 1/10W	
R132	1-216-073-00	METAL 10K 5% 1/10W	
R133	1-216-097-00	METAL 100K 5% 1/10W	
R134	1-216-049-00	METAL 1K 5% 1/10W	
R135	1-216-033-00	METAL 220 5% 1/10W	
R136	1-216-093-00	METAL 68K 5% 1/10W	

Ref.No	Part No.	Description			Remark
R137	1-216-053-00	METAL	1.5K	5%	1/10W
R138	1-216-051-00	METAL	1.2K	5%	1/10W
R139	1-216-053-00	METAL	1.5K	5%	1/10W
R140	1-216-295-11	METAL	0	5%	1/10W
R141	1-216-069-00	METAL	6.8K	5%	1/10W
R142	1-216-081-00	METAL	22K	5%	1/10W
R143	1-216-081-00	METAL	22K	5%	1/10W
R144	1-216-105-00	METAL	220K	5%	1/10W
R145	1-216-067-00	METAL	5.6K	5%	1/10W
R146	1-216-055-00	METAL	1.8K	5%	1/10W
R147	1-216-057-00	METAL	2.2K	5%	1/10W
R148	1-216-057-00	METAL	2.2K	5%	1/10W
R149	1-216-063-00	METAL	3.9K	5%	1/10W
R150	1-216-057-00	METAL	2.2K	5%	1/10W
R151	1-216-043-00	METAL	560	5%	1/10W
R152	1-216-031-00	METAL	180	5%	1/10W
R153	1-216-043-00	METAL	560	5%	1/10W
R154	1-216-057-00	METAL	2.2K	5%	1/10W
R155	1-216-093-00	METAL	68K	5%	1/10W
R156	1-216-021-00	METAL	68	5%	1/10W
R157	1-216-057-00	METAL	2.2K	5%	1/10W
R158	1-216-061-00	METAL	3.3K	5%	1/10W
R159	1-216-057-00	METAL	2.2K	5%	1/10W
R160	1-216-065-00	METAL	4.7K	5%	1/10W
R161	1-216-069-00	METAL	6.8K	5%	1/10W
R162	1-216-665-11	METAL	3.9K	0.50%	1/10W
R163	1-216-053-00	METAL	1.5K	5%	1/10W
R164	1-216-073-00	METAL	10K	5%	1/10W
R165	1-216-065-00	METAL	4.7K	5%	1/10W
R166	1-216-047-00	METAL	820	5%	1/10W
R167	1-216-027-00	METAL	120	5%	1/10W
R168	1-216-073-00	METAL	10K	5%	1/10W
R169	1-216-069-00	METAL	6.8K	5%	1/10W
R171	1-216-065-00	METAL	4.7K	5%	1/10W
R172	1-216-057-00	METAL	2.2K	5%	1/10W
R173	1-216-053-00	METAL	1.5K	5%	1/10W
R175	1-216-049-00	METAL	1K	5%	1/10W
R176	1-216-041-00	METAL	470	5%	1/10W
R177	1-216-049-00	METAL	1K	5%	1/10W
R178	1-216-049-00	METAL	1K	5%	1/10W
R179	1-216-295-11	METAL	0	5%	1/10W
R180	1-216-049-00	METAL	1K	5%	1/10W
R181	1-216-070-00	METAL	7.5K	5%	1/10W
R182	1-216-049-00	METAL	1K	5%	1/10W
R183	1-216-295-11	METAL	0	5%	1/10W
R185	1-216-061-00	METAL	3.3K	5%	1/10W
R186	1-216-053-00	METAL	1.5K	5%	1/10W
R187	1-216-033-00	METAL	220	5%	1/10W
R188	1-216-057-00	METAL	2.2K	5%	1/10W
R190	1-216-057-00	METAL	2.2K	5%	1/10W
R191	1-216-057-00	METAL	2.2K	5%	1/10W
R192	1-216-049-00	METAL	1K	5%	1/10W
R193	1-216-295-11	METAL	0	5%	1/10W
R195	1-216-049-00	METAL	1K	5%	1/10W
R196	1-216-049-00	METAL	1K	5%	1/10W
R197	1-216-049-00	METAL	1K	5%	1/10W
R198	1-216-049-00	METAL	1K	5%	1/10W
R200	1-216-067-00	METAL	5.6K	5%	1/10W
R202	1-216-295-11	METAL	0	5%	1/10W
R206	1-216-295-11	METAL	0	5%	1/10W
R209	1-216-039-00	METAL	390	5%	1/10W
R210	1-216-041-00	METAL	470	5%	1/10W
R211	1-216-057-00	METAL	2.2K	5%	1/10W
R212	1-216-073-00	METAL	10K	5%	1/10W
R213	1-216-083-00	METAL	27K	5%	1/10W
R214	1-216-057-00	METAL	2.2K	5%	1/10W
R216	1-216-041-00	METAL	470	5%	1/10W
R217	1-216-032-00	METAL	200	5%	1/10W
R218	1-216-053-00	METAL	1.5K	5%	1/10W
R219	1-216-053-00	METAL	1.5K	5%	1/10W
R220	1-216-049-00	METAL	1K	5%	1/10W
R221	1-216-049-00	METAL	1K	5%	1/10W
R222	1-216-073-00	METAL	10K	5%	1/10W
R223	1-216-041-00	METAL	470	5%	1/10W
R224	1-216-049-00	METAL	1K	5%	1/10W
R225	1-216-053-00	METAL	1.5K	5%	1/10W
R227	1-216-053-00	METAL	1.5K	5%	1/10W
R228	1-216-049-00	METAL	1K	5%	1/10W
R229	1-216-053-00	METAL	1.5K	5%	1/10W
R230	1-216-049-00	METAL	1K	5%	1/10W
R231	1-216-051-00	METAL	1.2K	5%	1/10W
R232	1-216-041-00	METAL	470	5%	1/10W
R233	1-216-061-00	METAL	3.3K	5%	1/10W
R234	1-216-295-11	METAL	0	5%	1/10W
R235	1-216-053-00	METAL	1.5K	5%	1/10W
R236	1-216-053-00	METAL	1.5K	5%	1/10W
R237	1-216-049-00	METAL	1K	5%	1/10W
R238	1-216-049-00	METAL	1K	5%	1/10W
R239	1-216-033-00	METAL	220	5%	1/10W
R240	1-216-061-00	METAL	3.3K	5%	1/10W
R241	1-216-053-00	METAL	1.5K	5%	1/10W
R245	1-216-105-00	METAL	220K	5%	1/10W
R255	1-216-041-00	METAL	470	5%	1/10W
R260	1-216-057-00	METAL	2.2K	5%	1/10W
R261	1-216-093-00	METAL	68K	5%	1/10W
R262	1-216-037-00	METAL	330	5%	1/10W
R263	1-216-073-00	METAL	10K	5%	1/10W
R265	1-216-073-00	METAL	10K	5%	1/10W
R266	1-216-073-00	METAL	10K	5%	1/10W
R268	1-216-037-00	METAL	330	5%	1/10W
R269	1-216-295-11	METAL	0	5%	1/10W
R272	1-216-065-00	METAL	4.7K	5%	1/10W
R273	1-216-105-00	METAL	220K	5%	1/10W
R274	1-216-073-00	METAL	10K	5%	1/10W
R280	1-216-061-00	METAL	3.3K	5%	1/10W
R281	1-216-022-00	METAL	75	5%	1/10W
R282	1-216-032-00	METAL	200	5%	1/10W
R283	1-216-053-00	METAL	1.5K	5%	1/10W
R284	1-216-689-11	METAL	39K	5%	1/10W
R285	1-216-053-00	METAL	1.5K	5%	1/10W
R288	1-216-043-00	METAL	560	5%	1/10W
R289	1-216-057-00	METAL	2.2K	5%	1/10W
R290	1-216-045-00	METAL	680	5%	1/10W
R291	1-216-045-00	METAL	680	5%	1/10W
R292	1-216-031-00	METAL	180	5%	1/10W
R293	1-216-057-00	METAL	2.2K	5%	1/10W
R301	1-216-053-00	METAL	1.5K	5%	1/10W
R302	1-216-053-00	METAL	1.5K	5%	1/10W
R303	1-216-053-00	METAL	1.5K	5%	1/10W
R304	1-216-033-00	METAL	220	5%	1/10W
R305	1-216-033-00	METAL	220	5%	1/10W
R306	1-216-057-00	METAL	2.2K	5%	1/10W
R307	1-216-057-00	METAL	2.2K	5%	1/10W
R308	1-216-061-00	METAL	3.3K	5%	1/10W
R309	1-216-065-00	METAL	4.7K	5%	1/10W
R310	1-216-065-00	METAL	4.7K	5%	1/10W
R311	1-216-061-00	METAL	3.3K	5%	1/10W
R313	1-216-033-00	METAL	220	5%	1/10W
R314	1-216-033-00	METAL	220	5%	1/10W
R315	1-216-089-00	METAL	47K	5%	1/10W

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Ref.No	Part No.	Description			Remark
R316	1-216-033-00	METAL	220	5%	1/10W
R317	1-216-033-00	METAL	220	5%	1/10W
R318	1-216-033-00	METAL	220	5%	1/10W
R319	1-216-073-00	METAL	10K	5%	1/10W
R320	1-216-033-00	METAL	220	5%	1/10W
R321	1-216-033-00	METAL	220	5%	1/10W
R322	1-216-073-00	METAL	10K	5%	1/10W
R323	1-216-073-00	METAL	10K	5%	1/10W
R324	1-216-033-00	METAL	220	5%	1/10W
R325	1-216-073-00	METAL	10K	5%	1/10W
R326	1-216-057-00	METAL	2.2K	5%	1/10W
R327	1-216-077-00	METAL	15K	5%	1/10W
R328	1-216-033-00	METAL	220	5%	1/10W
R329	1-216-033-00	METAL	220	5%	1/10W
R330	1-216-057-00	METAL	2.2K	5%	1/10W
R331	1-216-033-00	METAL	220	5%	1/10W
R332	1-216-053-00	METAL	1.5K	5%	1/10W
R333	1-216-057-00	METAL	2.2K	5%	1/10W
R334	1-216-053-00	METAL	1.5K	5%	1/10W
R335	1-216-053-00	METAL	1.5K	5%	1/10W
R336	1-216-033-00	METAL	220	5%	1/10W
R337	1-216-073-00	METAL	10K	5%	1/10W
R338	1-216-033-00	METAL	220	5%	1/10W
R339	1-216-073-00	METAL	10K	5%	1/10W
R340	1-216-057-00	METAL	2.2K	5%	1/10W
R341	1-216-057-00	METAL	2.2K	5%	1/10W
R342	1-216-045-00	METAL	680	5%	1/10W
R343	1-216-061-00	METAL	3.3K	5%	1/10W
R344	1-216-057-00	METAL	2.2K	5%	1/10W
R345	1-216-057-00	METAL	2.2K	5%	1/10W
R346	1-216-117-00	METAL	680K	5%	1/10W
R347	1-216-073-00	METAL	10K	5%	1/10W
R348	1-216-053-00	METAL	1.5K	5%	1/10W
R349	1-216-065-00	METAL	4.7K	5%	1/10W
R350	1-216-065-00	METAL	4.7K	5%	1/10W
R351	1-216-041-00	METAL	470	5%	1/10W
R352	1-216-071-00	METAL	8.2K	5%	1/10W
R353	1-216-089-00	METAL	47K	5%	1/10W
R354	1-216-073-00	METAL	10K	5%	1/10W
R355	1-216-089-00	METAL	47K	5%	1/10W
R356	1-216-073-00	METAL	10K	5%	1/10W
R357	1-216-057-00	METAL	2.2K	5%	1/10W
R358	1-216-045-00	METAL	680	5%	1/10W
R360	1-216-057-00	METAL	2.2K	5%	1/10W
R361	1-216-295-11	METAL	0	5%	1/10W
R363	1-216-057-00	METAL	2.2K	5%	1/10W
R365	1-216-073-00	METAL	10K	5%	1/10W
R366	1-216-085-00	METAL	33K	5%	1/10W
R367	1-216-047-00	METAL	820	5%	1/10W
R368	1-216-049-00	METAL	1K	5%	1/10W
R369	1-216-049-00	METAL	1K	5%	1/10W
R370	1-216-041-00	METAL	470	5%	1/10W
R371	1-216-057-00	METAL	2.2K	5%	1/10W
R372	1-216-041-00	METAL	470	5%	1/10W
R376	1-216-053-00	METAL	1.5K	5%	1/10W
R378	1-216-295-11	METAL	0	5%	1/10W
R379	1-216-295-11	METAL	0	5%	1/10W
R380	1-216-033-00	METAL	220	5%	1/10W
R381	1-216-295-11	METAL	0	5%	1/10W
R382	1-216-065-00	METAL	4.7K	5%	1/10W
R383	1-216-073-00	METAL	10K	5%	1/10W
R384	1-216-061-00	METAL	3.3K	5%	1/10W
R385	1-216-065-00	METAL	4.7K	5%	1/10W
R386	1-216-033-00	METAL	220	5%	1/10W
R387	1-216-045-00	METAL	680	5%	1/10W

Ref.No	Part No.	Description			Remark
R389	1-216-045-00	METAL	680	5%	1/10W
R391	1-216-049-00	METAL	1K	5%	1/10W
R392	1-216-095-00	METAL	82K	5%	1/10W
R393	1-216-049-00	METAL	1K	5%	1/10W
R394	1-216-057-00	METAL	2.2K	5%	1/10W
R395	1-216-053-00	METAL	1.5K	5%	1/10W
R397	1-216-049-00	METAL	1K	5%	1/10W
R399	1-216-049-00	METAL	1K	5%	1/10W
R400	1-216-033-00	METAL	220	5%	1/10W
R401	1-216-053-00	METAL	1.5K	5%	1/10W
R402	1-216-053-00	METAL	1.5K	5%	1/10W
R403	1-216-295-11	METAL	0	5%	1/10W
R405	1-216-015-00	METAL	39	5%	1/10W
R406	1-216-033-00	METAL	220	5%	1/10W
R407	1-216-049-00	METAL	1K	5%	1/10W
R408	1-216-057-00	METAL	2.2K	5%	1/10W
R409	1-216-053-00	METAL	1.5K	5%	1/10W
R410	1-216-049-00	METAL	1K	5%	1/10W
R413	1-216-049-00	METAL	1K	5%	1/10W
R414	1-216-033-00	METAL	220	5%	1/10W
R415	1-216-114-00	METAL	510K	5%	1/10W
R416	1-216-053-00	METAL	1.5K	5%	1/10W
R417	1-216-053-00	METAL	1.5K	5%	1/10W
R418	1-216-049-00	METAL	1K	5%	1/10W
R419	1-216-051-00	METAL	1.2K	5%	1/10W
R420	1-208-789-11	METAL	2K	0.50%	1/10W
R422	1-216-041-00	METAL	470	5%	1/10W
R424	1-216-033-00	METAL	220	5%	1/10W
R425	1-216-061-00	METAL	3.3K	5%	1/10W
R429	1-216-049-00	METAL	1K	5%	1/10W
R430	1-216-057-00	METAL	2.2K	5%	1/10W
R432	1-216-057-00	METAL	2.2K	5%	1/10W
R433	1-216-053-00	METAL	1.5K	5%	1/10W
R434	1-216-075-00	METAL	12K	5%	1/10W
R435	1-216-053-00	METAL	1.5K	5%	1/10W
R436	1-216-295-11	METAL	0	5%	1/10W
R437	1-216-049-00	METAL	1K	5%	1/10W
R439	1-216-069-00	METAL	6.8K	5%	1/10W
R441	1-216-049-00	METAL	1K	5%	1/10W
R442	1-216-033-00	METAL	220	5%	1/10W
R443	1-216-103-00	METAL	180K	5%	1/10W
R444	1-216-033-00	METAL	220	5%	1/10W
R445	1-216-025-00	METAL	100	5%	1/10W
R446	1-216-033-00	METAL	220	5%	1/10W
R447	1-216-053-00	METAL	1.5K	5%	1/10W
R448	1-216-053-00	METAL	1.5K	5%	1/10W
R449	1-216-053-00	METAL	1.5K	5%	1/10W
R450	1-216-049-00	METAL	1K	5%	1/10W
R451	1-216-049-00	METAL	1K	5%	1/10W
R452	1-216-049-00	METAL	1K	5%	1/10W
R453	1-216-033-00	METAL	220	5%	1/10W
R454	1-216-295-11	METAL	0	5%	1/10W
R455	1-216-081-00	METAL	22K	5%	1/10W
R456	1-216-081-00	METAL	22K	5%	1/10W
R457	1-216-081-00	METAL	22K	5%	1/10W
R458	1-216-061-00	METAL	3.3K	5%	1/10W
R459	1-216-061-00	METAL	3.3K	5%	1/10W
R460	1-216-061-00	METAL	3.3K	5%	1/10W
R461	1-216-065-00	METAL	4.7K	5%	1/10W
R462	1-216-051-00	METAL	1.2K	5%	1/10W
R463	1-216-059-00	METAL	2.7K	5%	1/10W
R464	1-216-097-00	METAL	100K	5%	1/10W
R465	1-216-049-00	METAL	1K	5%	1/10W
R466	1-216-061-00	METAL	3.3K	5%	1/10W
R467	1-216-049-00	METAL	1K	5%	1/10W

Ref.No	Part No.	Description			Remark
R468	1-216-065-00	METAL	4.7K	5%	1/10W
R469	1-216-081-00	METAL	22K	5%	1/10W
R470	1-216-071-00	METAL	8.2K	5%	1/10W
R471	1-216-073-00	METAL	10K	5%	1/10W
R472	1-216-053-00	METAL	1.5K	5%	1/10W
R473	1-216-295-11	METAL	0	5%	1/10W
R474	1-216-053-00	METAL	1.5K	5%	1/10W
R475	1-216-065-00	METAL	4.7K	5%	1/10W
R476	1-216-067-00	METAL	5.6K	5%	1/10W
R478	1-216-053-00	METAL	1.5K	5%	1/10W
R479	1-216-041-00	METAL	470	5%	1/10W
R481	1-216-295-11	METAL	0	5%	1/10W
R482	1-208-775-11	METAL	510	0.50%	1/10W
R483	1-216-033-00	METAL	220	5%	1/10W
R487	1-216-051-00	METAL	1.2K	5%	1/10W
R489	1-216-045-00	METAL	680	5%	1/10W
R490	1-216-041-00	METAL	470	5%	1/10W
R491	1-216-053-00	METAL	1.5K	5%	1/10W
R493	1-216-061-00	METAL	3.3K	5%	1/10W
R494	1-216-071-00	METAL	8.2K	5%	1/10W
R495	1-216-073-00	METAL	10K	5%	1/10W
R496	1-216-073-00	METAL	10K	5%	1/10W
R497	1-216-073-00	METAL	10K	5%	1/10W
R498	1-216-073-00	METAL	10K	5%	1/10W
R499	1-216-077-00	METAL	15K	5%	1/10W
R501	1-216-057-00	METAL	2.2K	5%	1/10W
R502	1-216-057-00	METAL	2.2K	5%	1/10W
R503	1-216-057-00	METAL	2.2K	5%	1/10W
R504	1-216-295-11	METAL	0	5%	1/10W
R505	1-216-033-00	METAL	220	5%	1/10W
R506	1-216-033-00	METAL	220	5%	1/10W
R507	1-216-033-00	METAL	220	5%	1/10W
R508	1-216-033-00	METAL	220	5%	1/10W
R509	1-216-057-00	METAL	2.2K	5%	1/10W
R510	1-216-057-00	METAL	2.2K	5%	1/10W
R511	1-216-057-00	METAL	2.2K	5%	1/10W
R512	1-216-033-00	METAL	220	5%	1/10W
R514	1-216-057-00	METAL	2.2K	5%	1/10W
R515	1-216-033-00	METAL	220	5%	1/10W
R516	1-216-033-00	METAL	220	5%	1/10W
R517	1-216-033-00	METAL	220	5%	1/10W
R518	1-216-033-00	METAL	220	5%	1/10W
R519	1-216-057-00	METAL	2.2K	5%	1/10W
R520	1-216-033-00	METAL	220	5%	1/10W
R521	1-216-033-00	METAL	220	5%	1/10W
R522	1-216-057-00	METAL	2.2K	5%	1/10W
R523	1-216-057-00	METAL	2.2K	5%	1/10W
R524	1-216-057-00	METAL	2.2K	5%	1/10W
R526	1-216-295-11	METAL	0	5%	1/10W
R527	1-216-053-00	METAL	1.5K	5%	1/10W
R528	1-216-033-00	METAL	220	5%	1/10W
R529	1-216-057-00	METAL	2.2K	5%	1/10W
R530	1-216-049-00	METAL	1K	5%	1/10W
R531	1-216-057-00	METAL	2.2K	5%	1/10W
R532	1-216-049-00	METAL	1K	5%	1/10W
R534	1-216-033-00	METAL	220	5%	1/10W
R535	1-216-033-00	METAL	220	5%	1/10W
R536	1-216-033-00	METAL	220	5%	1/10W
R537	1-216-049-00	METAL	1K	5%	1/10W
R538	1-216-049-00	METAL	1K	5%	1/10W
R539	1-216-685-11	METAL	27K	0.50%	1/10W
R540	1-216-049-00	METAL	1K	5%	1/10W
R541	1-216-049-00	METAL	1K	5%	1/10W
R542	1-216-049-00	METAL	1K	5%	1/10W
R543	1-216-057-00	METAL	2.2K	5%	1/10W

Ref.No	Part No.	Description			Remark
R544	1-216-049-00	METAL	1K	5%	1/10W
R545	1-216-057-00	METAL	2.2K	5%	1/10W
R546	1-216-049-00	METAL	1K	5%	1/10W
R547	1-216-057-00	METAL	2.2K	5%	1/10W
R548	1-216-049-00	METAL	1K	5%	1/10W
R549	1-216-049-00	METAL	1K	5%	1/10W
R550	1-216-049-00	METAL	1K	5%	1/10W
R551	1-216-057-00	METAL	2.2K	5%	1/10W
R552	1-216-057-00	METAL	2.2K	5%	1/10W
R553	1-216-033-00	METAL	220	5%	1/10W
R554	1-216-059-00	METAL	2.7K	5%	1/10W
R555	1-216-059-00	METAL	2.7K	5%	1/10W
R556	1-216-033-00	METAL	220	5%	1/10W
R557	1-216-041-00	METAL	470	5%	1/10W
R558	1-216-041-00	METAL	470	5%	1/10W
R559	1-216-022-00	METAL	75	5%	1/10W
R560	1-216-041-00	METAL	470	5%	1/10W
R561	1-216-001-00	METAL	10	5%	1/10W
R563	1-216-001-00	METAL	10	5%	1/10W
R564	1-216-001-00	METAL	10	5%	1/10W
R565	1-216-001-00	METAL	10	5%	1/10W
R566	1-216-001-00	METAL	10	5%	1/10W
R567	1-216-001-00	METAL	10	5%	1/10W
R568	1-216-051-00	METAL	1.2K	5%	1/10W
R569	1-216-063-00	METAL	3.9K	5%	1/10W
R570	1-216-051-00	METAL	1.2K	5%	1/10W
R571	1-216-061-00	METAL	3.3K	5%	1/10W
R572	1-216-041-00	METAL	470	5%	1/10W
R573	1-216-022-00	METAL	75	5%	1/10W
R575	1-216-041-00	METAL	470	5%	1/10W
R576	1-216-041-00	METAL	470	5%	1/10W
R577	1-216-053-00	METAL	1.5K	5%	1/10W
R578	1-216-081-00	METAL	22K	5%	1/10W
R579	1-216-081-00	METAL	22K	5%	1/10W
R581	1-216-055-00	METAL	1.8K	5%	1/10W
R582	1-216-053-00	METAL	1.5K	5%	1/10W
R583	1-216-053-00	METAL	1.5K	5%	1/10W
R584	1-216-061-00	METAL	3.3K	5%	1/10W
R585	1-216-053-00	METAL	1.5K	5%	1/10W
R586	1-216-022-00	METAL	75	5%	1/10W
R587	1-216-073-00	METAL	10K	5%	1/10W
R590	1-216-037-00	METAL	330	5%	1/10W
R591	1-216-037-00	METAL	330	5%	1/10W
R601	1-216-050-00	METAL	1.1K	5%	1/10W
R602	1-216-063-00	METAL	3.9K	5%	1/10W
R603	1-216-059-00	METAL	2.7K	5%	1/10W
R604	1-216-051-00	METAL	1.2K	5%	1/10W
R605	1-216-046-00	METAL	750	5%	1/10W
R606	1-216-041-00	METAL	470	5%	1/10W
R607	1-216-041-00	METAL	470	5%	1/10W
R632	1-216-295-11	METAL	0	5%	1/10W
R633	1-216-295-11	METAL	0	5%	1/10W
R634	1-216-295-11	METAL	0	5%	1/10W
R803	1-216-049-00	METAL	1K	5%	1/10W
R804	1-216-065-00	METAL	4.7K	5%	1/10W
R805	1-216-059-00	METAL	2.7K	5%	1/10W
R806	1-216-057-00	METAL	2.2K	5%	1/10W
R901	1-216-049-00	METAL	1K	5%	1/10W
R902	1-216-049-00	METAL	1K	5%	1/10W
R903	1-216-057-00	METAL	2.2K	5%	1/10W
R905	1-216-057-00	METAL	2.2K	5%	1/10W
R906	1-216-033-00	METAL	220	5%	1/10W
R907	1-216-057-00	METAL	2.2K	5%	1/10W
R908	1-216-057-00	METAL	2.2K	5%	1/10W
R910	1-216-073-00	METAL	10K	5%	1/10W

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Ref.No	Part No.	Description			Remark
R911	1-216-073-00	METAL	10K	5%	1/10W
R915	1-216-049-00	METAL	1K	5%	1/10W
R916	1-216-057-00	METAL	2.2K	5%	1/10W
R917	1-216-049-00	METAL	1K	5%	1/10W
R934	1-216-041-00	METAL	470	5%	1/10W
R935	1-216-055-00	METAL	1.8K	5%	1/10W
R936	1-216-055-00	METAL	1.8K	5%	1/10W
R937	1-216-045-00	METAL	680	5%	1/10W
R938	1-216-045-00	METAL	680	5%	1/10W
R939	1-216-041-00	METAL	470	5%	1/10W
R941	1-216-295-11	METAL	0	5%	1/10W
R943	1-216-295-11	METAL	0	5%	1/10W
R945	1-216-295-11	METAL	0	5%	1/10W
R950	1-216-041-00	METAL	470	5%	1/10W
R951	1-216-097-00	METAL	100K	5%	1/10W
R952	1-216-065-00	METAL	4.7K	5%	1/10W
R954	1-216-065-00	METAL	4.7K	5%	1/10W
R960	1-216-059-00	METAL	2.7K	5%	1/10W
R982	1-216-049-00	METAL	1K	5%	1/10W
R983	1-216-049-00	METAL	1K	5%	1/10W
R984	1-216-049-00	METAL	1K	5%	1/10W
		<VARIABLE RESISTOR>			
RV301	1-238-852-11	RES, ADJ, CERMET 470			
RV302	1-238-852-11	RES, ADJ, CERMET 470			
RV303	1-238-852-11	RES, ADJ, CERMET 470			
RV304	1-238-852-11	RES, ADJ, CERMET 470			
		<CRYSTAL>			
X101	1-760-193-11	VIBRATOR, CRYSTAL			
X102	1-579-780-21	VIBRATOR, CRYSTAL			
X301	1-579-661-21	OSCILLATOR, CRYSTAL			
**********					
	*A-8275-445-A	DUS-12 BOARD, COMPLETE			
		**********			
		<CAPACITOR>			
C901	1-165-319-11	CERAMIC	0.1uF		50V
		<CONNECTOR>			
CN907	1-506-468-11	PIN, CONNECTOR 3P			
CN908	1-506-468-11	PIN, CONNECTOR 3P			
CN911	1-506-470-11	PIN, CONNECTOR 5P			
CN912	1-506-467-11	PIN, CONNECTOR 2P			
		<IC>			
IC901	8-759-633-10	IC M54544AL			
IC902	8-759-988-13	IC UPC393G2			
		<JUMPER>			
JR900	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR903	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR904	1-216-296-00	METAL GLAZE	0	5%	1/8W
		<RESISTOR>			
R901	1-216-037-00	METAL	330	5%	1/10W
R902	1-216-085-00	METAL	33K	5%	1/10W
R903	1-216-085-00	METAL	33K	5%	1/10W
R904	1-216-081-00	METAL	22K	5%	1/10W
R905	1-216-073-00	METAL	10K	5%	1/10W
R906	1-216-105-00	METAL	220K	5%	1/10W
R907	1-216-089-91	METAL	47K	5%	1/10W

Ref.No	Part No.	Description			Remark
R908	1-216-097-00	METAL	100K	5%	1/10W
R909	1-216-097-00	METAL	100K	5%	1/10W
R924	1-216-041-00	METAL	470	5%	1/10W
R925	1-216-041-00	METAL	470	5%	1/10W
**********					
	*A-8274-829-A	FMY-13 BOARD, COMPLETE (UP-1200A)			
	*A-8274-822-A	FMY-13P BOARD, COMPLETE (UP-1200AEPM)			
		**********			
		<BUZZER>			
BZ901	1-529-069-11	BUZZER, PIEZOELECTRIC			
		<CAPACITOR>			
C102	1-163-227-11	CERAMIC	10PF		50V
C103	1-126-204-11	ELECT	47uF	20%	16V
C104	1-163-038-00	CERAMIC	0.1uF		25V
C105	1-163-038-00	CERAMIC	0.1uF		25V
C106	1-163-038-00	CERAMIC	0.1uF		25V
C108	1-163-038-00	CERAMIC	0.1uF		25V
C110	1-126-217-11	ELECT	15uF	20%	10V
C111	1-163-038-00	CERAMIC	0.1uF		25V
C112	1-163-117-00	CERAMIC	100PF	5%	50V
C113	1-126-217-11	ELECT	15uF	20%	10V
C114	1-163-038-00	CERAMIC	0.1uF		25V
C115	1-126-217-11	ELECT	15uF	20%	10V
C116	1-163-038-00	CERAMIC	0.1uF		25V
C202	1-163-227-11	CERAMIC	10PF		50V
C204	1-163-038-00	CERAMIC	0.1uF		25V
C205	1-163-038-00	CERAMIC	0.1uF		25V
C206	1-163-038-00	CERAMIC	0.1uF		25V
C208	1-163-038-00	CERAMIC	0.1uF		25V
C210	1-126-217-11	ELECT	15uF	20%	10V
C211	1-163-038-00	CERAMIC	0.1uF		25V
C212	1-163-117-00	CERAMIC	100PF	5%	50V
C213	1-126-217-11	ELECT	15uF	20%	10V
C214	1-163-038-00	CERAMIC	0.1uF		25V
C215	1-126-217-11	ELECT	15uF	20%	10V
C216	1-163-038-00	CERAMIC	0.1uF		25V
C302	1-163-227-11	CERAMIC	10PF		50V
C304	1-163-038-00	CERAMIC	0.1uF		25V
C305	1-163-038-00	CERAMIC	0.1uF		25V
C306	1-163-038-00	CERAMIC	0.1uF		25V
C308	1-163-038-00	CERAMIC	0.1uF		25V
C310	1-126-217-11	ELECT	15uF	20%	10V
C311	1-163-038-00	CERAMIC	0.1uF		25V
C312	1-163-117-00	CERAMIC	100PF	5%	50V
C313	1-126-217-11	ELECT	15uF	20%	10V
C314	1-163-038-00	CERAMIC	0.1uF		25V
C315	1-126-217-11	ELECT	15uF	20%	10V
C316	1-163-038-00	CERAMIC	0.1uF		25V
C401	1-163-038-00	CERAMIC	0.1uF		25V
C402	1-163-038-00	CERAMIC	0.1uF		25V
C403	1-163-038-00	CERAMIC	0.1uF		25V
C404	1-163-038-00	CERAMIC	0.1uF		25V
C406	1-163-038-00	CERAMIC	0.1uF		25V
C407	1-163-038-00	CERAMIC	0.1uF		25V
C408	1-163-038-00	CERAMIC	0.1uF		25V
C409	1-163-038-00	CERAMIC	0.1uF		25V
C410	1-126-204-11	ELECT	47uF	20%	16V
C411	1-126-204-11	ELECT	47uF	20%	16V
C412	1-126-204-11	ELECT	47uF	20%	16V
C413	1-163-038-00	CERAMIC	0.1uF		25V
C414	1-163-038-00	CERAMIC	0.1uF		25V

Ref.No	Part No.	Description			Remark
C415	1-126-204-11	ELECT	47uF	20%	16V
C416	1-163-038-00	CERAMIC	0.1uF		25V
C417	1-163-038-00	CERAMIC	0.1uF		25V
C418	1-163-038-00	CERAMIC	0.1uF		25V
C420	1-164-004-11	CERAMIC	0.1uF	10%	25V
C421	1-163-132-00	CERAMIC	430PF	5%	50V
C422	1-163-113-00	CERAMIC	68PF	5%	50V
C423	1-163-113-00	CERAMIC	68PF	5%	50V
C424	1-163-113-00	CERAMIC	68PF	5%	50V
C425	1-163-113-00	CERAMIC	68PF	5%	50V
C426	1-163-113-00	CERAMIC	68PF	5%	50V
C427	1-163-113-00	CERAMIC	68PF	5%	50V
C428	1-163-113-00	CERAMIC	68PF	5%	50V
C429	1-163-113-00	CERAMIC	68PF	5%	50V
C430	1-163-113-00	CERAMIC	68PF	5%	50V
C440	1-163-133-00	CERAMIC	47uF	5%	50V
C441	1-163-275-11	CERAMIC	0.001MF	5%	50V
C442	1-163-097-00	CERAMIC	15PF	5%	50V
C443	1-163-275-11	CERAMIC	0.001MF	5%	50V
C444	1-163-243-11	CERAMIC	47uF	5%	50V
C445	1-163-275-11	CERAMIC	0.001MF	5%	50V
C446	1-163-275-11	CERAMIC	0.001MF	5%	50V
C447	1-163-275-11	CERAMIC	0.001MF	5%	50V
C449	1-163-097-00	CERAMIC	15PF 5% 50V (UP-1200AEPM)		
C501	1-164-346-11	CERAMIC	1uF		16V
C502	1-164-346-11	CERAMIC	1uF		16V
C503	1-164-346-11	CERAMIC	1uF		16V
C504	1-164-346-11	CERAMIC	1uF		16V
C505	1-164-346-11	CERAMIC	1uF		16V
C506	1-164-346-11	CERAMIC	1uF		16V
C507	1-163-038-00	CERAMIC	0.1uF		25V
C508	1-126-204-11	ELECT	47uF	20%	16V
C519	1-163-109-00	CERAMIC	47PF	5%	50V
C520	1-163-109-00	CERAMIC	47PF	5%	50V
C521	1-163-117-00	CERAMIC	100PF	5%	50V
C522	1-163-038-00	CERAMIC	0.1uF		25V
C523	1-163-038-00	CERAMIC	0.1uF		25V
C526	1-163-037-11	CERAMIC	0.022uF	10%	25V
C527	1-163-038-00	CERAMIC	0.1uF		25V
C528	1-163-038-00	CERAMIC	0.1uF		25V
C529	1-126-204-11	ELECT	47uF	20%	16V
C530	1-164-346-11	CERAMIC	1uF		16V
C531	1-163-109-00	CERAMIC	47PF	5%	50V
C532	1-163-235-11	CERAMIC	22PF	5%	50V
C533	1-163-101-00	CERAMIC	22PF	5%	50V
C534	1-126-204-11	ELECT	47uF	20%	16V
C535	1-163-038-00	CERAMIC	0.1uF		25V
C536	1-163-109-00	CERAMIC	47PF	5%	50V
C537	1-163-038-00	CERAMIC	0.1uF		25V
C538	1-163-038-00	CERAMIC	0.1uF		25V
C539	1-163-038-00	CERAMIC	0.1uF		25V
C540	1-163-038-00	CERAMIC	0.1uF		25V
C541	1-163-038-00	CERAMIC	0.1uF		25V
C542	1-163-038-00	CERAMIC	0.1uF		25V
C543	1-163-038-00	CERAMIC	0.1uF		25V
C544	1-163-038-00	CERAMIC	0.1uF		25V
C545	1-126-204-11	ELECT	47uF	20%	16V
C546	1-163-038-00	CERAMIC	0.1uF		25V
C547	1-163-038-00	CERAMIC	0.1uF		25V
C548	1-163-038-00	CERAMIC	0.1uF		25V
C549	1-163-113-00	CERAMIC	68PF	5%	50V
C550	1-163-038-91	CERAMIC	0.1MF	5%	25V
C551	1-163-038-91	CERAMIC	0.1MF	5%	25V
C601	1-163-037-11	CERAMIC	0.022uF	10%	25V
C602	1-128-065-11	ELECT	68uF	20%	10V

Ref.No	Part No.	Description			Remark
C603	1-163-037-11	CERAMIC	0.022uF	10%	25V
C604	1-128-065-11	ELECT	68uF	20%	10V
C605	1-163-037-11	CERAMIC	0.022uF	10%	25V
C606	1-126-204-11	ELECT	47uF	20%	16V
C607	1-163-037-11	CERAMIC	0.022uF	10%	25V
C608	1-126-204-11	ELECT	47uF	20%	16V
C706	1-163-038-91	CERAMIC	0.1uF		25V
C901	1-163-038-00	CERAMIC	0.1uF		25V
C902	1-163-038-00	CERAMIC	0.1uF		25V
C903	1-163-038-00	CERAMIC	0.1uF		25V
C904	1-163-038-00	CERAMIC	0.1uF		25V
C905	1-163-038-00	CERAMIC	0.1uF		25V
C906	1-163-097-00	CERAMIC	15PF	5%	50V
C907	1-163-097-00	CERAMIC	15PF	5%	50V
C909	1-128-065-11	ELECT	68uF	20%	10V
C910	1-163-038-00	CERAMIC	0.1uF		25V
C911	1-163-038-00	CERAMIC	0.1uF		25V
C912	1-163-038-00	CERAMIC	0.1uF		25V
		<CONNECTOR>			
CN1	1-565-212-11	CONNECTOR, FPC (ZIF) 26P			
CN2	1-565-212-11	CONNECTOR, FPC (ZIF) 26P			
CN4	1-566-532-11	CONNECTOR, FPC (ZIF) 16P			
CN5	1-566-523-11	CONNECTOR, FPC (ZIF) 7P			
CN6	1-506-486-11	PIN, CONNECTOR 7P			
CN7	1-506-486-11	PIN, CONNECTOR 7P			
CN8	*1-564-031-00	PIN, CONNECTOR 6P			
CN9	1-506-469-11	PIN, CONNECTOR 4P			
CN10	1-506-469-11	PIN, CONNECTOR 4P			
		<DIODE>			
D101	8-719-820-41	DIODE 1SS302			
D201	8-719-820-41	DIODE 1SS302			
D301	8-719-820-41	DIODE 1SS302			
D901	8-719-400-18	DIODE MA152WK			
D903	8-719-104-34	DIODE 1S2836			
		<FERRITE, BEAD>			
FB137	1-412-390-21	INDUCTOR CHIP 0UH			
FB138	1-412-390-21	INDUCTOR CHIP 0UH			
FB139	1-412-390-21	INDUCTOR CHIP 0UH			
FB140	1-412-390-21	INDUCTOR CHIP 0UH			
FB141	1-412-390-21	INDUCTOR CHIP 0UH			
FB142	1-412-390-21	INDUCTOR CHIP 0UH			
FB143	1-412-390-21	INDUCTOR CHIP 0UH			
FB144	1-412-390-21	INDUCTOR CHIP 0UH			
FB145	1-412-390-21	INDUCTOR CHIP 0UH			
FB147	1-412-390-21	INDUCTOR CHIP 0UH			
FB149	1-412-390-21	INDUCTOR CHIP 0UH			
FB150	1-412-390-21	INDUCTOR CHIP 0UH			
FB151	1-412-390-21	INDUCTOR CHIP 0UH			
FB152	1-412-390-21	INDUCTOR CHIP 0UH			
FB153	1-412-390-21	INDUCTOR CHIP 0UH			
FB154	1-412-390-21	INDUCTOR CHIP 0UH			
		<IC>			
IC101	8-752-337-04	IC CXD1176Q			
IC201	8-752-337-04	IC CXD1176Q			
IC301	8-752-337-04	IC CXD1176Q			
IC401	8-759-093-19	IC CXD8444Q			
IC402	8-752-338-46	IC CXD1178Q			
IC403	8-752-093-18	IC UPD23C1001EAGW-355E2			
IC404	8-752-093-17	IC UPD23C1001EAGW-354E2			
IC405	8-759-038-00	IC MC74HC574AF			
IC410	8-759-927-29	IC SN74HCU04ANS-E05			
IC411	8-759-033-16	IC MC74F74M			

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Ref.No	Part No.	Description	Remark
IC501	8-759-352-14	IC HM51L240CS7-EL	
IC502	8-759-352-14	IC HM51L240CS7-EL	
IC503	8-759-352-14	IC HM51L240CS7-EL	
IC504	8-759-093-89	IC HM51L240AS7-EL	
IC505	8-759-093-89	IC HM51L240AS7-EL	
IC506	8-759-093-89	IC HM51L240AS7-EL	
IC507	8-759-114-07	IC UPD65013GF-407-3BA	
IC508	8-759-114-09	IC UPD65006GF-250-3B8	
IC509	8-759-084-15	IC CXD8391Q	
IC510	8-759-339-89	IC HD6475328F-UP12V111 (UP-1200A)	
IC510	8-759-332-55	IC HD6435368SW08F (UP-1200AEPM)	
IC511	8-759-992-78	IC 74F257ASJ	
IC512	8-759-989-03	IC 74F32SJ	
IC513	8-759-989-03	IC 74F32SJ	
IC514	8-759-948-02	IC 74F86SJ	
IC515	8-759-948-01	IC 74F04SJ	
IC516	8-759-989-01	IC 74F08SJ-T5L	
IC901	8-759-325-71	IC MB89098PFV-G-114-BND	
IC902	8-759-937-56	IC S-8054ALB-LM-S	
		<INDUCTOR>	
L600	1-424-090-11	COIL, LINE FILTER	
L601	1-424-090-11	COIL, LINE FILTER	
L602	1-424-090-11	COIL, LINE FILTER	
L900	1-424-090-11	COIL, LINE FILTER	
L901	1-424-090-11	COIL, LINE FILTER	
		<TRANSISTOR>	
Q101	8-729-010-75	TRANSISTOR MSC4116-BC	
Q102	8-729-402-84	TRANSISTOR XN4601	
Q201	8-729-010-75	TRANSISTOR MSC4116-BC	
Q202	8-729-402-84	TRANSISTOR XN4601	
Q301	8-729-010-75	TRANSISTOR MSC4116-BC	
Q302	8-729-402-84	TRANSISTOR XN4601	
Q401	8-729-901-01	TRANSISTOR DTC144EK	
Q440	8-729-230-63	TRANSISTOR 2SC4116YG	
Q441	8-729-230-63	TRANSISTOR 2SC4116YG	
Q442	8-729-230-63	TRANSISTOR 2SC4116YG	
Q902	8-729-901-01	TRANSISTOR DTC144EK	
Q903	8-729-901-01	TRANSISTOR DTC144EK	
		<RESISTOR>	

Ref.No	Part No.	Description			Remark
R101	1-216-022-00	METAL	75	5%	1/10W
R104	1-216-017-00	METAL	47	5%	1/10W
R105	1-216-033-00	METAL	220	5%	1/10W
R106	1-216-033-00	METAL	220	5%	1/10W
R107	1-216-033-00	METAL	220	5%	1/10W
R108	1-216-033-00	METAL	220	5%	1/10W
R109	1-216-033-00	METAL	220	5%	1/10W
R110	1-216-033-00	METAL	220	5%	1/10W
R111	1-216-033-00	METAL	220	5%	1/10W
R112	1-216-033-00	METAL	220	5%	1/10W
R129	1-216-033-00	METAL	220	5%	1/10W
R130	1-216-041-00	METAL	470	5%	1/10W
R131	1-216-041-00	METAL	470	5%	1/10W
R132	1-216-041-00	METAL	470	5%	1/10W
R133	1-216-041-00	METAL	470	5%	1/10W
R134	1-216-041-00	METAL	470	5%	1/10W
R135	1-216-041-00	METAL	470	5%	1/10W
R136	1-216-041-00	METAL	470	5%	1/10W
R137	1-216-041-00	METAL	470	5%	1/10W
R140	1-216-009-00	METAL	22	5%	1/10W
R141	1-216-025-00	METAL	100	5%	1/10W
R142	1-216-073-00	METAL	10K	5%	1/10W
R143	1-216-073-00	METAL	10K	5%	1/10W
R144	1-216-053-00	METAL	1.5K	5%	1/10W
R145	1-216-033-00	METAL	220	5%	1/10W
R146	1-216-053-00	METAL	1.5K	5%	1/10W
R147	1-216-295-11	METAL	0	5%	1/10W
R201	1-216-022-00	METAL	75	5%	1/10W
R204	1-216-017-00	METAL	47	5%	1/10W
R205	1-216-033-00	METAL	220	5%	1/10W
R206	1-216-033-00	METAL	220	5%	1/10W
R207	1-216-033-00	METAL	220	5%	1/10W
R208	1-216-033-00	METAL	220	5%	1/10W
R209	1-216-033-00	METAL	220	5%	1/10W
R210	1-216-033-00	METAL	220	5%	1/10W
R211	1-216-033-00	METAL	220	5%	1/10W
R212	1-216-033-00	METAL	220	5%	1/10W
R229	1-216-033-00	METAL	220	5%	1/10W
R230	1-216-041-00	METAL	470	5%	1/10W
R231	1-216-041-00	METAL	470	5%	1/10W
R232	1-216-041-00	METAL	470	5%	1/10W
R233	1-216-041-00	METAL	470	5%	1/10W
R234	1-216-041-00	METAL	470	5%	1/10W
R235	1-216-041-00	METAL	470	5%	1/10W
R236	1-216-041-00	METAL	470	5%	1/10W
R237	1-216-041-00	METAL	470	5%	1/10W
R240	1-216-009-00	METAL	22	5%	1/10W
R241	1-216-025-00	METAL	100	5%	1/10W
R242	1-216-073-00	METAL	10K	5%	1/10W
R243	1-216-073-00	METAL	10K	5%	1/10W
R244	1-216-053-00	METAL	1.5K	5%	1/10W
R245	1-216-033-00	METAL	220	5%	1/10W
R246	1-216-053-00	METAL	1.5K	5%	1/10W
R247	1-216-295-11	METAL	0	5%	1/10W
R301	1-216-022-00	METAL	75	5%	1/10W
R304	1-216-017-00	METAL	47	5%	1/10W
R305	1-216-033-00	METAL	220	5%	1/10W
R306	1-216-033-00	METAL	220	5%	1/10W
R307	1-216-033-00	METAL	220	5%	1/10W
R308	1-216-033-00	METAL	220	5%	1/10W
R309	1-216-033-00	METAL	220	5%	1/10W
R310	1-216-033-00	METAL	220	5%	1/10W
R311	1-216-033-00	METAL	220	5%	1/10W
R312	1-216-033-00	METAL	220	5%	1/10W
R329	1-216-033-00	METAL	220	5%	1/10W
R330	1-216-041-00	METAL	470	5%	1/10W
R331	1-216-041-00	METAL	470	5%	1/10W
R332	1-216-041-00	METAL	470	5%	1/10W
R333	1-216-041-00	METAL	470	5%	1/10W
R334	1-216-041-00	METAL	470	5%	1/10W
R335	1-216-041-00	METAL	470	5%	1/10W
R336	1-216-041-00	METAL	470	5%	1/10W
R337	1-216-041-00	METAL	470	5%	1/10W
R340	1-216-009-00	METAL	22	5%	1/10W
R341	1-216-025-00	METAL	100	5%	1/10W
R342	1-216-073-00	METAL	10K	5%	1/10W
R343	1-216-073-00	METAL	10K	5%	1/10W
R344	1-216-053-00	METAL	1.5K	5%	1/10W
R345	1-216-033-00	METAL	220	5%	1/10W
R346	1-216-053-00	METAL	1.5K	5%	1/10W
R347	1-216-295-11	METAL	0	5%	1/10W
R401	1-216-295-11	METAL	0	5%	1/10W
R402	1-216-017-00	METAL	47	5%	1/10W
R403	1-216-032-00	METAL	200	5%	1/10W
R404	1-216-032-00	METAL	200	5%	1/10W
R405	1-216-032-00	METAL	200	5%	1/10W
R406	1-216-061-00	METAL	3.3K	5%	1/10W
R422	1-216-065-00	METAL	4.7K	5%	1/10W
R423	1-216-295-11	METAL	0	5%	1/10W
R424	1-216-295-11	METAL	0	5%	1/10W

Ref.No	Part No.	Description			Remark
R426	1-216-295-11	METAL	0	5%	1/10W
R427	1-216-069-00	METAL	6.8K	5%	1/10W
R428	1-216-069-00	METAL	6.8K	5%	1/10W
R429	1-216-049-00	METAL	1K	5%	1/10W
R430	1-216-295-11	METAL	0	5%	1/10W
R440	1-216-295-11	METAL	0	5%	1/10W
R441	1-216-295-11	METAL	0	5%	1/10W
R442	1-216-073-00	METAL	10K	5%	1/10W
R443	1-216-061-00	METAL	3.3K	5%	1/10W
R444	1-216-037-00	METAL	330	5%	1/10W
R445	1-216-025-91	METAL	100	5%	1/10W
R446	1-216-077-00	METAL	15K	5%	1/10W
R447	1-216-073-00	METAL	10K	5%	1/10W
R448	1-216-033-00	METAL	220	5%	1/10W
R449	1-216-037-00	METAL	330	5%	1/10W
R450	1-216-033-00	METAL	220	5%	1/10W
R451	1-216-077-00	METAL	15K	5%	1/10W
R452	1-216-073-00	METAL	10K	5%	1/10W
R453	1-216-033-00	METAL	220	5%	1/10W
R454	1-216-037-00	METAL	330	5%	1/10W
R455	1-216-033-00	METAL	220	5%	1/10W
R456	1-216-121-00	METAL	1M	5%	1/10W
R457	1-216-121-00	METAL	1M	5%	1/10W
R458	1-216-121-00	METAL	1M	5%	1/10W
R459	1-216-295-11	METAL	0	5%	1/10W
R471	1-216-295-11	METAL	0	5%	1/10W
R474	1-216-295-11	METAL	0	5%	1/10W
R476	1-216-295-11	METAL	0	5%	1/10W
R478	1-216-121-00	METAL	1M	5%	1/10W
R501	1-216-017-00	METAL	47	5%	1/10W
R502	1-216-017-00	METAL	47	5%	1/10W
R503	1-216-017-00	METAL	47	5%	1/10W
R504	1-216-017-00	METAL	47	5%	1/10W
R505	1-216-017-00	METAL	47	5%	1/10W
R506	1-216-017-00	METAL	47	5%	1/10W
R507	1-216-017-00	METAL	47	5%	1/10W
R508	1-216-017-00	METAL	47	5%	1/10W
R509	1-216-017-00	METAL	47	5%	1/10W
R510	1-216-017-00	METAL	47	5%	1/10W
R511	1-216-049-00	METAL	1K	5%	1/10W
R512	1-216-049-00	METAL	1K	5%	1/10W
R513	1-216-017-00	METAL	47	5%	1/10W
R514	1-216-017-00	METAL	47	5%	1/10W
R515	1-216-017-00	METAL	47	5%	1/10W
R517	1-216-017-00	METAL	47	5%	1/10W
R518	1-216-017-00	METAL	47	5%	1/10W
R519	1-216-025-00	METAL	100	5%	1/10W
R525	1-216-017-00	METAL	47	5%	1/10W
R526	1-216-017-00	METAL	47	5%	1/10W
R527	1-216-049-00	METAL	1K	5%	1/10W
R530	1-216-041-00	METAL	470	5%	1/10W
R531	1-216-017-00	METAL	47	5%	1/10W
R532	1-216-017-00	METAL	47	5%	1/10W
R536	1-216-017-00	METAL	47	5%	1/10W
R541	1-216-017-00	METAL	47	5%	1/10W
R542	1-216-065-00	METAL	4.7K	5%	1/10W
R551	1-216-295-11	METAL	0	5%	1/10W
R556	1-216-295-11	METAL	0	5%	1/10W
R564	1-216-033-00	METAL	220	5%	1/10W
R565	1-216-033-00	METAL	220	5%	1/10W
R566	1-216-089-00	METAL	47K	5%	1/10W
R568	1-216-295-11	METAL	0	5%	1/10W
R572	1-216-089-91	METAL	47K	5%	1/10W
R573	1-216-017-00	METAL	47	5%	1/10W
R574	1-216-017-00	METAL	47	5%	1/10W

Ref.No	Part No.	Description			Remark
R575	1-216-017-00	METAL	47	5%	1/10W
R576	1-216-049-00	METAL	1K	5%	1/10W
R578	1-216-295-11	METAL	0	5%	1/10W
R579	1-216-295-11	METAL	0	5%	1/10W
R580	1-216-073-00	METAL	10K	5%	1/10W
R582	1-216-295-11	METAL	0	5%	1/10W
R583	1-216-033-00	METAL	220	5%	1/10W
R584	1-216-033-00	METAL	220	5%	1/10W
R585	1-216-033-00	METAL	220	5%	1/10W
R586	1-216-033-00	METAL	220	5%	1/10W
R587	1-216-033-00	METAL	220	5%	1/10W
R588	1-216-033-00	METAL	220	5%	1/10W
R589	1-216-033-00	METAL	220	5%	1/10W
R590	1-216-033-00	METAL	220	5%	1/10W
R591	1-216-033-00	METAL	220	5%	1/10W
R592	1-216-033-00	METAL	220	5%	1/10W
R593	1-216-033-00	METAL	220	5%	1/10W
R594	1-216-033-00	METAL	220	5%	1/10W
R595	1-216-033-00	METAL	220	5%	1/10W
R596	1-216-033-00	METAL	220	5%	1/10W
R597	1-216-033-00	METAL	220	5%	1/10W
R598	1-216-033-00	METAL	220	5%	1/10W
R599	1-216-033-00	METAL	220	5%	1/10W
R600	1-216-033-00	METAL	220	5%	1/10W
R601	1-216-049-00	METAL	1K	5%	1/10W
R602	1-216-033-00	METAL	220	5%	1/10W
R603	1-216-033-00	METAL	220	5%	1/10W
R604	1-216-033-00	METAL	220	5%	1/10W
R605	1-216-033-00	METAL	220	5%	1/10W
R606	1-216-033-00	METAL	220	5%	1/10W
R607	1-216-033-00	METAL	220	5%	1/10W
R608	1-216-033-00	METAL	220	5%	1/10W
R609	1-216-033-00	METAL	220	5%	1/10W
R610	1-216-033-00	METAL	220	5%	1/10W
R611	1-216-033-00	METAL	220	5%	1/10W
R612	1-216-033-00	METAL	220	5%	1/10W
R613	1-216-033-00	METAL	220	5%	1/10W
R614	1-216-033-00	METAL	220	5%	1/10W
R615	1-216-033-00	METAL	220	5%	1/10W
R616	1-216-033-00	METAL	220	5%	1/10W
R617	1-216-033-00	METAL	220	5%	1/10W
R618	1-216-033-00	METAL	220	5%	1/10W
R619	1-216-033-00	METAL	220	5%	1/10W
R620	1-216-295-11	METAL	0	5%	1/10W
R621	1-216-295-11	METAL	0	5%	1/10W
R622	1-216-295-11	METAL	0	5%	1/10W
R623	1-216-295-11	METAL	0	5%	1/10W
R624	1-216-295-11	METAL	0	5%	1/10W
R625	1-216-295-11	METAL	0	5%	1/10W
R626	1-216-295-11	METAL	0	5%	1/10W
R627	1-216-295-11	METAL	0	5%	1/10W
R628	1-216-295-11	METAL	0	5%	1/10W
R642	1-216-295-11	METAL	0	5%	1/10W
R643	1-216-065-00	METAL	4.7K	5%	1/10W
R645	1-216-295-11	METAL	0	5%	1/10W (UP-1200A)
R647	1-216-295-11	METAL	0	5%	1/10W (UP-1200AEPM)
R650	1-216-033-00	METAL	220	5%	1/10W
R651	1-216-295-11	METAL	0	5%	1/10W
R652	1-216-033-00	METAL	220	5%	1/10W
R655	1-216-295-11	METAL	0	5%	1/10W
R816	1-216-295-11	METAL	0	5%	1/10W
R817	1-216-295-11	METAL	0	5%	1/10W
R818	1-216-295-11	METAL	0	5%	1/10W
R819	1-216-073-00	METAL	10K	5%	1/10W
R820	1-216-073-00	METAL	10K	5%	1/10W

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Ref.No	Part No.	Description			Remark
R821	1-216-073-00	METAL	10K	5%	1/10W
R822	1-216-073-00	METAL	10K	5%	1/10W
R823	1-216-295-11	METAL	0	5%	1/10W
R824	1-216-295-11	METAL	0	5%	1/10W
R901	1-216-089-91	METAL	47K	5%	1/10W
R908	1-216-089-91	METAL	47K	5%	1/10W
R910	1-216-089-91	METAL	47K	5%	1/10W
R911	1-216-089-91	METAL	47K	5%	1/10W
R912	1-216-089-91	METAL	47K	5%	1/10W
R915	1-216-089-91	METAL	47K	5%	1/10W
R916	1-216-089-91	METAL	47K	5%	1/10W
R917	1-216-025-00	METAL	100	5%	1/10W
R918	1-216-089-91	METAL	47K	5%	1/10W
R919	1-216-089-91	METAL	47K	5%	1/10W
R920	1-216-025-00	METAL	100	5%	1/10W
R921	1-216-025-00	METAL	100	5%	1/10W
R922	1-216-089-91	METAL	47K	5%	1/10W
R923	1-216-025-00	METAL	100	5%	1/10W
R924	1-216-089-00	METAL	47K	5%	1/10W
R926	1-216-295-11	METAL	0	5%	1/10W
R927	1-216-295-11	METAL	0	5%	1/10W
R928	1-216-109-00	METAL	330K	5%	1/10W
R929	1-216-025-00	METAL	100	5%	1/10W
R931	1-216-025-00	METAL	100	5%	1/10W
R932	1-216-065-00	METAL	4.7K	5%	1/10W
R936	1-216-097-00	METAL	100K	5%	1/10W
R937	1-216-049-00	METAL	1K	5%	1/10W
R939	1-216-065-00	METAL	4.7K	5%	1/10W
R942	1-216-065-00	METAL	4.7K	5%	1/10W
R945	1-216-041-00	METAL	470	5%	1/10W
		<CRYSTAL>			
X501	1-579-868-11	VIBRATOR, CRYSTAL			
X901	1-579-550-11	VIBRATOR, CRYSTAL			
XTL901	1-579-369-21	VIBRATOR			

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*A-8274-824-A	HM-22(L) BOARD, COMPLETE (UP-1200A)	
*A-8274-819-A	HM-22P(L) BOARD, COMPLETE(UP-1200AEPM)	

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<CAPACITOR>

C701	1-126-950-11	ELECT	330uF	20%	35V
C703	1-165-112-11	CERAMIC	0.33uF		16V
C704	1-165-112-11	CERAMIC	0.33uF		16V
C705	1-124-779-00	ELECT	10uF	20%	16V
C706	1-165-112-11	CERAMIC	0.33uF		16V
C707	1-165-112-11	CERAMIC	0.33uF		16V
C708	1-135-166-21	TANTAL	47uF	20%	6.3V
C711	1-165-112-11	CERAMIC	0.33uF		16V
C712	1-165-112-11	CERAMIC	0.33uF		16V
C713	1-162-970-11	CERAMIC	0.01uF	10%	25V
C714	1-162-970-11	CERAMIC	0.01uF	10%	25V
C715	1-165-112-11	CERAMIC	0.33uF		16V
C716	1-162-970-11	CERAMIC	0.01uF	10%	25V
C717	1-164-360-11	CERAMIC	0.1uF		16V
C718	1-162-970-11	CERAMIC	0.01uF	10%	25V
C719	1-162-970-11	CERAMIC	0.01uF	10%	25V
C720	1-164-360-11	CERAMIC	0.1uF		16V
C721	1-164-360-11	CERAMIC	0.1uF		16V
C722	1-164-360-11	CERAMIC	0.1uF		16V
C723	1-162-970-11	CERAMIC	0.01uF	10%	25V
C724	1-162-970-11	CERAMIC	0.01uF	10%	25V
C725	1-162-970-11	CERAMIC	0.01uF	10%	25V
C726	1-162-970-11	CERAMIC	0.01uF	10%	25V
C727	1-162-970-11	CERAMIC	0.01uF	10%	25V
C728	1-162-970-11	CERAMIC	0.01uF	10%	25V
C729	1-162-970-11	CERAMIC	0.01uF	10%	25V
C734	1-164-360-11	CERAMIC	0.1uF		16V
C735	1-165-112-11	CERAMIC	0.33uF		16V
C736	1-162-970-11	CERAMIC	0.01uF	10%	25V
C737	1-126-204-11	ELECT	47uF	20%	16V
C738	1-165-112-11	CERAMIC	0.33uF		16V
C739	1-135-166-21	TANTAL	47uF	20%	6.3V
C740	1-165-112-11	CERAMIC	0.33uF		16V
C741	1-165-112-11	CERAMIC	0.33uF		16V
C742	1-126-204-11	ELECT	47uF	20%	16V
C744	1-165-112-11	CERAMIC	0.33uF		16V
C746	1-165-112-11	CERAMIC	0.33uF		16V
C747	1-164-360-11	CERAMIC	0.1uF		16V
C749	1-165-112-11	CERAMIC	0.33uF		16V
C750	1-165-112-11	CERAMIC	0.33uF		16V
C751	1-162-970-11	CERAMIC	0.01uF	10%	25V
C752	1-162-970-11	CERAMIC	0.01uF	10%	25V
C753	1-126-204-11	ELECT	47uF	20%	16V
C754	1-162-945-11	CERAMIC	22PF	5%	50V
C755	1-162-945-11	CERAMIC	22PF	5%	50V
C756	1-165-112-11	CERAMIC	0.33uF		16V
C757	1-162-970-11	CERAMIC	0.01uF	10%	25V
C758	1-162-970-11	CERAMIC	0.01uF	10%	25V
C759	1-162-970-11	CERAMIC	0.01uF	10%	25V
C760	1-162-970-11	CERAMIC	0.01uF	10%	25V
C761	1-162-970-11	CERAMIC	0.01uF	10%	25V
C762	1-162-970-11	CERAMIC	0.01uF	10%	25V
C763	1-162-970-11	CERAMIC	0.01uF	10%	25V
C764	1-162-970-11	CERAMIC	0.01uF	10%	25V
C765	1-162-970-11	CERAMIC	0.01uF	10%	25V
C766	1-162-970-11	CERAMIC	0.01uF	10%	25V
C767	1-162-970-11	CERAMIC	0.01uF	10%	25V
C768	1-164-357-11	CERAMIC	1000PF	5%	50V
C769	1-164-357-11	CERAMIC	1000PF	5%	50V
C770	1-164-360-11	CERAMIC	0.1uF		16V
C771	1-164-360-11	CERAMIC	0.1uF		16V
C776	1-165-112-11	CERAMIC	0.33uF		16V
C777	1-165-112-11	CERAMIC	0.33uF		16V
C778	1-165-112-11	CERAMIC	0.33uF		16V
C779	1-162-939-11	CERAMIC	8PF		50V
C780	1-162-939-11	CERAMIC	8PF		50V
C781	1-162-951-11	CERAMIC	68PF		50V
C782	1-162-951-11	CERAMIC	68PF		50V
C783	1-162-951-11	CERAMIC	68PF		50V
C784	1-162-951-11	CERAMIC	68PF		50V
C785	1-162-951-11	CERAMIC	68PF		50V

<CONNECTOR>

CN701	*1-580-055-21	PIN, CONNECTOR 2P
CN702	*1-580-056-21	PIN, CONNECTOR 3P
CN703	*1-580-056-21	PIN, CONNECTOR 3P
CN704	*1-580-056-21	PIN, CONNECTOR 3P
CN705	1-566-537-11	CONNECTOR, FPC (NON ZIF) 5P
CN706	1-566-523-11	CONNECTOR, FPC (ZIF) 7P
CN707	1-506-481-11	PIN, CONNECTOR 2P
CN708	1-506-481-11	PIN, CONNECTOR 2P
CN709	1-506-485-11	PIN, CONNECTOR 6P
CN710	1-569-775-21	PIN, CONNECTOR 5P
CN711	1-569-775-21	PIN, CONNECTOR 5P
CN712	1-506-481-11	PIN, CONNECTOR 2P
CN713	1-569-775-21	PIN, CONNECTOR 5P
CN714	1-566-532-11	CONNECTOR, FPC (ZIF) 16P

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

Ref.No	Part No.	Description	Remark
CN715	1-566-526-11	CONNECTOR, FPC (ZIF) 10P	
CN716	1-506-494-11	PIN, CONNECTOR 15P	
CN717	1-566-528-21	CONNECTOR, FPC (ZIF) 12P	
CN718	*1-580-056-21	PIN, CONNECTOR 3P	
CN719	1-506-481-11	PIN, CONNECTOR 2P	
CN722	*1-580-055-21	PIN, CONNECTOR 2P	
CN723	*1-580-056-21	PIN, CONNECTOR 3P	
CN724	1-580-265-11	CONNECTOR, BOARD TO BOARD 16P	
CN725	1-506-481-11	PIN, CONNECTOR 2P	
		<DIODE>	
D701	8-719-200-02	DIODE 10E2	
D702	8-719-200-02	DIODE 10E2	
D703	8-719-104-34	DIODE 1S2835	
D704	8-719-104-34	DIODE 1S2835	
D705	8-719-104-34	DIODE 1S2835	
D706	8-719-104-34	DIODE 1S2835	
D707	8-719-104-34	DIODE 1S2835	
D709	8-719-104-34	DIODE 1S2835	
D711	8-719-104-34	DIODE 1S2835	
		<FUSE>	
F001	1-532-777-21	FUSE, MICRO (SECONDARY)	
		<FILTER>	
FL1	1-239-492-11	FILTER, EMI	
		<IC>	
IC701	8-759-154-84	IC HDC443V2	
IC702	8-759-053-58	IC IDT6116SA25SO	
IC703	8-759-053-58	IC IDT6116SA25SO	
IC704	8-759-344-54	IC IDT6116SA25SO	
IC706	8-759-998-98	IC LM358D	
IC707	8-759-085-67	IC LM339NS	
IC708	8-752-863-53	IC CXP80P116Q	
IC709	8-759-157-19	IC MB3863PF-G-BND	
IC710	8-759-925-74	IC SN74HC04ANS	
IC711	8-759-085-67	IC LM339NS	
IC712	8-759-085-67	IC LM339NS	
IC713	8-759-927-46	IC SN74HC00ANS	
IC714	8-759-242-70	IC TC7WU04F	
		<INDUCTOR>	
L701	1-424-090-11	COIL, LINE FILTER	
L702	1-424-090-11	COIL, LINE FILTER	
L703	1-424-090-11	COIL, LINE FILTER	
L704	1-412-390-21	INDUCTOR CHIP 0UH	
L705	1-412-390-21	INDUCTOR CHIP 0UH	
L706	1-412-390-21	INDUCTOR CHIP 0UH	
L707	1-412-390-21	INDUCTOR CHIP 0UH	
		<TRANSISTOR>	
Q701	8-729-901-04	TRANSISTOR DTA114EK	
Q702	8-729-901-00	TRANSISTOR DTC124EK	
Q703	8-729-114-48	TRANSISTOR 2SB962-Z-P	
Q705	8-729-017-80	TRANSISTOR 2SD992-Z-E2	
Q706	8-729-017-80	TRANSISTOR 2SD992-Z-E2	
Q707	8-729-017-80	TRANSISTOR 2SD992-Z-E2	
Q708	8-729-017-80	TRANSISTOR 2SD992-Z-E2	
Q709	8-729-140-75	TRANSISTOR 2SD999-CLCK	
Q710	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q711	8-729-120-28	TRANSISTOR 2SC1623-L5L6	

Ref.No	Part No.	Description			Remark
		<RESISTOR>			
R701	1-216-829-11	METAL	4.7K	5%	1/16W
R702	1-216-829-11	METAL	4.7K	5%	1/16W
R703	1-216-829-11	METAL	4.7K	5%	1/16W
R704	1-216-829-11	METAL	4.7K	5%	1/16W
R705	1-216-818-11	METAL	560	5%	1/16W
R706	1-216-818-11	METAL	560	5%	1/16W
R707	1-216-818-11	METAL	560	5%	1/16W
R708	1-216-818-11	METAL	560	5%	1/16W
R709	1-216-813-11	METAL	220	5%	1/16W
R710	1-216-813-11	METAL	220	5%	1/16W
R711	1-216-813-11	METAL	220	5%	1/16W
R712	1-216-813-11	METAL	220	5%	1/16W
R713	⚠1-215-930-11	METAL	10	5%	5W
R715	⚠1-215-930-11	METAL	10	5%	5W
R716	1-216-841-11	METAL	47K	5%	1/16W
R717	1-216-819-11	METAL	680	5%	1/16W
R718	1-216-809-11	METAL	100	5%	1/16W
R719	1-260-099-11	CARBON	1K	5%	1/2W
R720	1-216-833-11	METAL	10K	5%	1/16W
R721	1-216-825-11	METAL	2.2K	5%	1/16W
R722	1-216-815-11	METAL	330	5%	1/16W
R723	1-216-831-11	METAL	6.8K	5%	1/16W
R724	1-216-825-11	METAL	2.2K	5%	1/16W
R725	1-216-840-11	METAL	39K	5%	1/16W
R726	1-216-818-11	METAL	560	5%	1/16W
R727	1-216-813-11	METAL	220	5%	1/16W
R728	1-216-839-11	METAL	33K	5%	1/16W
R729	1-216-841-11	METAL	47K	5%	1/16W
R730	1-216-835-11	METAL	15K	5%	1/16W
R731	1-216-849-11	METAL	220K	5%	1/16W
R732	1-216-833-11	METAL	10K	5%	1/16W
R733	1-216-839-11	METAL	33K	5%	1/16W
R734	1-216-840-11	METAL	39K	5%	1/16W
R735	1-216-831-11	METAL	6.8K	5%	1/16W
R736	1-216-841-11	METAL	47K	5%	1/16W
R737	1-216-841-11	METAL	47K	5%	1/16W
R738	1-216-841-11	METAL	47K	5%	1/16W
R739	1-216-841-11	METAL	47K	5%	1/16W
R740	1-216-837-11	METAL	22K	5%	1/16W
R741	1-216-841-11	METAL	47K	5%	1/16W
R742	1-216-864-11	METAL	0	5%	1/16W
R744	1-216-837-11	METAL	22K	5%	1/16W
R746	1-216-841-11	METAL	47K	5%	1/16W
R747	1-216-849-11	METAL	220K	5%	1/16W
R748	1-216-833-11	METAL	10K	5%	1/16W
R750	1-216-841-11	METAL	47K	5%	1/16W
R751	1-216-833-11	METAL	10K	5%	1/16W
R752	1-216-833-11	METAL	10K	5%	1/16W
R753	1-216-813-11	METAL	220	5%	1/16W
R754	1-216-837-11	METAL	22K	5%	1/16W
R755	1-216-841-11	METAL	47K	5%	1/16W
R756	1-216-849-11	METAL	220K	5%	1/16W
R757	1-216-833-11	METAL	10K	5%	1/16W
R758	1-216-821-11	METAL	1K	5%	1/16W
R760	1-216-813-11	METAL	220	5%	1/16W
R761	1-216-837-11	METAL	22K	5%	1/16W
R762	1-216-841-11	METAL	47K	5%	1/16W
R763	1-216-821-11	METAL	1K	5%	1/16W
R764	1-216-849-11	METAL	220K	5%	1/16W
R765	1-216-833-11	METAL	10K	5%	1/16W
R766	1-216-839-11	METAL	33K	5%	1/16W
R767	1-216-821-11	METAL	1K	5%	1/16W
R768	1-216-821-11	METAL	1K	5%	1/16W

HM-22(L)/22P(L)

Ref.No	Part No.	Description			Remark
R769	1-216-841-11	METAL	47K	5%	1/16W
R770	1-216-841-11	METAL	47K	5%	1/16W
R771	1-216-841-11	METAL	47K	5%	1/16W
R772	1-216-841-11	METAL	47K	5%	1/16W
R773	1-216-841-11	METAL	47K	5%	1/16W
R774	1-216-841-11	METAL	47K	5%	1/16W
R775	1-216-841-11	METAL	47K	5%	1/16W
R776	1-216-841-11	METAL	47K	5%	1/16W
R777	1-216-841-11	METAL	47K	5%	1/16W
R778	1-216-841-11	METAL	47K	5%	1/16W
R779	1-216-813-11	METAL	220	5%	1/16W
R780	1-216-813-11	METAL	220	5%	1/16W
R781	1-216-813-11	METAL	220	5%	1/16W
R782	1-216-813-11	METAL	220	5%	1/16W
R783	1-216-813-11	METAL	220	5%	1/16W
R784	1-216-813-11	METAL	220	5%	1/16W
R785	1-216-813-11	METAL	220	5%	1/16W
R786	1-216-813-11	METAL	220	5%	1/16W
R787	1-216-813-11	METAL	220	5%	1/16W
R788	1-216-813-11	METAL	220	5%	1/16W
R789	1-216-837-11	METAL	22K	5%	1/16W
R790	1-216-839-11	METAL	33K	5%	1/16W
R791	1-216-813-11	METAL	220	5%	1/16W
R792	1-216-813-11	METAL	220	5%	1/16W
R793	1-216-838-11	METAL	27K	5%	1/16W
R794	1-216-838-11	METAL	27K	5%	1/16W
R795	1-216-821-11	METAL	1K	5%	1/16W
R796	1-216-821-11	METAL	1K	5%	1/16W
R797	1-216-837-11	METAL	22K	5%	1/16W
R798	1-216-839-11	METAL	33K	5%	1/16W
R799	1-216-813-11	METAL	220	5%	1/16W
R800	1-216-813-11	METAL	220	5%	1/16W
R801	1-216-838-11	METAL	27K	5%	1/16W
R802	1-216-838-11	METAL	27K	5%	1/16W
R803	1-216-821-11	METAL	1K	5%	1/16W
R804	1-216-821-11	METAL	1K	5%	1/16W
R805	1-216-849-11	METAL	220K	5%	1/16W
R806	1-216-849-11	METAL	220K	5%	1/16W
R807	1-216-849-11	METAL	220K	5%	1/16W
R808	1-216-849-11	METAL	220K	5%	1/16W
R809	1-216-837-11	METAL	22K	5%	1/16W
R810	1-216-829-11	METAL	4.7K	5%	1/16W
R811	1-216-833-11	METAL	10K	5%	1/16W
R812	1-216-833-11	METAL	10K	5%	1/16W
R813	1-216-833-11	METAL	10K	5%	1/16W
R814	1-216-833-11	METAL	10K	5%	1/16W
R815	1-216-833-11	METAL	10K	5%	1/16W
R816	1-216-833-11	METAL	10K	5%	1/16W
R817	1-216-829-11	METAL	4.7K	5%	1/16W
R818	1-216-829-11	METAL	4.7K	5%	1/16W
R819	1-216-829-11	METAL	4.7K	5%	1/16W
R820	1-216-829-11	METAL	4.7K	5%	1/16W
R822	1-216-829-11	METAL	4.7K	5%	1/16W
R823	1-216-829-11	METAL	4.7K	5%	1/16W
R824	1-216-829-11	METAL	4.7K	5%	1/16W
R825	1-216-829-11	METAL	4.7K	5%	1/16W
R826	1-216-841-11	METAL	47K	5%	1/16W
R827	1-216-841-11	METAL	47K	5%	1/16W
R828	1-216-841-11	METAL	47K	5%	1/16W
R829	1-216-841-11	METAL	47K	5%	1/16W
R830	1-216-839-11	METAL	33K	5%	1/16W
R831	1-216-837-11	METAL	22K	5%	1/16W
R832	1-216-833-11	METAL	10K	5%	1/16W
R833	1-216-841-11	METAL	47K	5%	1/16W

Ref.No	Part No.	Description			Remark
R834	1-216-841-11	METAL	47K	5%	1/16W
R835	1-216-841-11	METAL	47K	5%	1/16W
R837	1-216-813-11	METAL	220	5%	1/16W
R838	1-216-841-11	METAL	47K	5%	1/16W
R839	1-216-841-11	METAL	47K	5%	1/16W
R840	1-216-821-11	METAL	1K	5%	1/16W
R841	1-216-849-11	METAL	220K	5%	1/16W
R842	1-216-833-11	METAL	10K	5%	1/16W
R843	1-216-839-11	METAL	33K	5%	1/16W
R844	1-216-837-11	METAL	22K	5%	1/16W
R846	1-216-813-11	METAL	220	5%	1/16W
R847	1-216-841-11	METAL	47K	5%	1/16W
R848	1-216-841-11	METAL	47K	5%	1/16W
R849	1-216-821-11	METAL	1K	5%	1/16W
R850	1-216-849-11	METAL	220K	5%	1/16W
R851	1-216-833-11	METAL	10K	5%	1/16W
R852	1-216-839-11	METAL	33K	5%	1/16W
R853	1-216-837-11	METAL	22K	5%	1/16W
R854	1-216-821-11	METAL	1K	5%	1/16W
R855	1-216-841-11	METAL	47K	5%	1/16W
R856	1-216-839-11	METAL	33K	5%	1/16W
R857	1-216-815-11	METAL	330	5%	1/16W
R858	1-216-841-11	METAL	47K	5%	1/16W
R859	1-216-821-11	METAL	1K	5%	1/16W
R860	1-216-849-11	METAL	220K	5%	1/16W
R861	1-216-833-11	METAL	10K	5%	1/16W
R862	1-216-839-11	METAL	33K	5%	1/16W
R863	1-216-837-11	METAL	22K	5%	1/16W
R866	1-216-821-11	METAL	1K	5%	1/16W
R867	1-216-821-11	METAL	1K	5%	1/16W
R868	1-216-829-11	METAL	4.7K	5%	1/16W
R869	1-216-821-11	METAL	1K	5%	1/16W
R870	1-216-821-11	METAL	1K	5%	1/16W
R871	1-216-821-11	METAL	1K	5%	1/16W
R872	1-216-821-11	METAL	1K	5%	1/16W
R873	1-216-841-11	METAL	47K	5%	1/16W
R874	1-216-841-11	METAL	47K	5%	1/16W
R879	1-216-809-11	METAL	100	5%	1/16W
R880	1-216-841-11	METAL	47K	5%	1/16W
R881	1-216-841-11	METAL	47K	5%	1/16W
R882	1-216-841-11	METAL	47K	5%	1/16W
R883	1-216-841-11	METAL	47K	5%	1/16W
R884	1-216-841-11	METAL	47K	5%	1/16W
R885	1-216-841-11	METAL	47K	5%	1/16W
R886	1-216-857-11	METAL	1M	5%	1/16W
R887	1-216-857-11	METAL	1M	5%	1/16W
R888	1-216-841-11	METAL	47K	5%	1/16W
R889	1-216-841-11	METAL	47K	5%	1/16W
R891	1-216-819-11	METAL	680	5%	1/16W
R892	1-216-841-11	METAL	47K	5%	1/16W
R893	1-216-817-11	METAL	470	5%	1/16W
R895	1-216-864-11	METAL	0	5%	1/16W
R896	1-216-813-11	METAL	220	5%	1/10W
R897	1-216-813-11	METAL	220	5%	1/10W
R898	1-216-813-11	METAL	220	5%	1/10W
R899	1-216-813-11	METAL	220	5%	1/10W
R900	1-216-813-11	METAL	220	5%	1/10W
R901	1-216-813-11	METAL	220	5%	1/10W
R902	1-216-813-11	METAL	220	5%	1/10W
		<SWITCH>			
S705	1-692-088-41	SWITHC, TACTILE			
S706	1-571-684-11	SWITCH, TACTIL			

Ref.No	Part No.	Description			Remark
		<THERMISTOR>			
TH701	1-809-357-21	THERMISTOR, NTC (2125)			
		<CRYSTAL>			
X701	1-579-907-21	VIBRATOR, CERAMIC			
X702	1-579-070-41	VIBRATOR, CRYSTAL			
X703	1-579-906-21	VIBRATOR, CERAMIC			
**********					
	*A-8275-446-B	IF-27 BOARD, COMPLETE			
		**********			
		<CAPACITOR>			
C1	1-163-009-11	CERAMIC	0.001uF	10%	50V
C2	1-163-038-00	CERAMIC	0.1uF		25V
C3	1-124-589-11	ELECT	47uF	20%	16V
		<CONNECTOR>			
CN1	1-506-486-11	PIN, CONNECTOR 7P			
CN2	1-506-485-11	PIN, CONNECTOR 6P			
CN3	1-564-014-11	PIN, CONNECTOR 4P			
CN4	1-506-483-21	PIN, CONNECTOR 4P			
		<DIODE>			
D1	8-719-400-18	DIODE MA152WK			
D2	8-719-108-12	DIODE RD9.1E-W			
D3	8-719-108-12	DIODE RD9.1E-W			
D4	8-719-108-12	DIODE RD9.1E-W			
D5	8-719-108-12	DIODE RD9.1E-W			
D6	8-719-108-12	DIODE RD9.1E-W			
D7	8-719-108-12	DIODE RD9.1E-W			
D8	8-719-800-76	DIODE 1SS226			
D9	8-719-800-76	DIODE 1SS226			
		<FILTER>			
FL1	1-236-738-11	FILTER, EMI			
FL2	1-236-738-11	FILTER, EMI			
FL3	1-236-738-11	FILTER, EMI			
FL4	1-236-738-11	FILTER, EMI			
FL5	1-236-738-11	FILTER, EMI			
FL6	1-236-738-11	FILTER, EMI			
FL7	1-236-738-11	FILTER, EMI			
FL8	1-236-738-11	FILTER, EMI			
FL9	1-236-738-11	FILTER, EMI			
		<JACK>			
J1	1-691-274-11	CONNECTOR			
J2	1-691-274-11	CONNECTOR			
J3	1-569-803-11	CONNECTOR, (S) TERMINAL 4P			
J4	1-569-803-11	CONNECTOR, (S) TERMINAL 4P			
J5	1-507-792-00	JACK			
		<JUMPER>			
JR1	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR2	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR3	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR4	1-216-295-11	METAL GLAZE	0	5%	1/10W
JR5	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR6	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR7	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR8	1-216-296-00	METAL	0	5%	1/10W
JR9	1-216-296-00	METAL	0	5%	1/10W
JR10	1-216-296-00	METAL	0	5%	1/10W

Ref.No	Part No.	Description			Remark
		<TRANSISTOR>			
Q1	8-729-901-01	TRANSISTOR DTC144EK			
Q2	8-729-140-75	TRANSISTOR 2SD999-CLCK			
		<RESISTOR>			
R1	1-216-631-11	METAL	150	0.50%	1/10W
R5	1-216-631-11	METAL	150	0.50%	1/10W
R7	1-216-049-00	METAL	1K	5%	1/10W
R8	1-216-089-91	METAL	47K	5%	1/10W
R9	1-216-025-00	METAL	100	5%	1/10W
		<VARIABLE, RESISTOR>			
RL1	1-515-622-11	RELAY			
RL2	1-515-622-11	RELAY			
RL3	1-515-622-11	RELAY			
		<SWITCH>			
S1	1-572-084-11	SWITCH, SLIDE			
**********					
	*A-8275-438-A	KY-15 BOARD, COMPLETE			
		**********			
		<CAPACITOR>			
C803	1-163-038-00	CERAMIC	0.1uF		25V
C804	1-163-009-11	CERAMIC	0.001uF	10%	50V
C805	1-163-038-00	CERAMIC	0.1uF		25V
C807	1-163-031-11	CERAMIC	0.1uF		50V
		<CONNECTOR>			
CN801	*1-506-486-11	PIN, CONNECTOR 7P			
CN802	*1-506-486-11	PIN, CONNECTOR 7P			
CN803	1-506-493-11	PIN, CONNECTOR 14P			
CN805	*1-563-863-21	SOCKET, CONNECTOR 26P			
CN806	1-506-484-11	PIN, CONNECTOR 5P			
		<DIODE>			
D802	8-719-800-76	DIODE 1SS226			
D804	8-719-800-76	DIODE 1SS226			
D806	8-719-800-76	DIODE 1SS226			
		<IC>			
IC802	8-759-988-13	IC LM393PS-T1			
		<JUMPER>			
JR821	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR822	1-216-295-11	METAL GLAZE	0	5%	1/10W
JR824	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR825	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR828	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR831	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR832	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR833	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR834	1-216-296-00	METAL GLAZE	0	5%	1/8W
JR835	1-216-296-00	METAL GLAZE	0	5%	1/8W
		<TRANSISTOR>			
Q801	8-729-900-53	TRANSISTOR DTC114EK			
Q802	8-729-900-53	TRANSISTOR DTC114EK			
		<RESISTOR>			
R801	1-216-295-11	METAL	0	5%	1/10W
R802	1-216-295-11	METAL	0	5%	1/10W
R803	1-216-295-11	METAL	0	5%	1/10W

KY-15 **PTC-27** **SU10** **S-25** **SW-39** **SW-41** **SW-42** **SW-208** **SW-210**

Ref.No	Part No.	Description				Remark
R804	1-216-295-11	METAL	0	5%	1/10W	
R805	1-216-295-11	METAL	0	5%	1/10W	
R806	1-216-295-11	METAL	0	5%	1/10W	
R807	1-216-295-11	METAL	0	5%	1/10W	
R808	1-216-295-11	METAL	0	5%	1/10W	
R809	1-216-295-11	METAL	0	5%	1/10W	
R810	1-216-295-11	METAL	0	5%	1/10W	
R812	1-216-049-00	METAL	1K	5%	1/10W	
R813	1-216-081-00	METAL	22K	5%	1/10W	
R814	1-216-073-00	METAL	10K	5%	1/10W	
R815	1-216-073-00	METAL	10K	5%	1/10W	
R816	1-216-049-00	METAL	1K	5%	1/10W	
R817	1-216-295-11	METAL	0	5%	1/10W	
R822	1-216-295-11	METAL	0	5%	1/10W	
**********						
	*A-8275-451-A	PTC-27 BOARD, COMPLETE				
		**********				
		<CAPACITOR>				
C801	1-124-229-00	ELECT	33uF	20%	6.3V	
		<CONNECTOR>				
CN816	1-506-468-11	PIN, CONNECTOR 3P				
CN817	1-506-470-11	PIN, CONNECTOR 5P				
		<DIODE>				
D807	8-719-420-90	DIODE	02DZ5.1-TPH3			
D808	8-719-420-90	DIODE	02DZ5.1-TPH3			
		<IC>				
IC801	8-748-015-08	RAY CATCHER ELEMENT SBX8015-H				
		<RESISTOR>				
R811	1-216-029-00	METAL	150	5%	1/10W	
**********						
	*1-650-853-15	SU-10 PC BOARD				
		**********				
		<CAPACITOR>				
C905	1-165-319-11	CERAMIC	0.1uF		50V	
		<CONNECTOR>				
CN916	*1-506-481-11	PIN, CONNECTOR 2P				
**********						
	*A-8275-437-A	S-25 BOARD, COMPLETE				
		**********				
		<CONNECTOR>				
CN811	*1-506-481-11	PIN, CONNECTOR 2P				
		<DIODE>				
D803	8-719-975-79	DIODE SLP255B-51-A				
		<RESISTOR>				
R830	1-216-029-00	METAL	150	5%	1/10W	
**********						

Ref.No	Part No.	Description	Remark
	*A-8275-443-A	SW-39 BOARD, COMPLETE	
		**********	
		<CONNECTOR>	
CN913	1-506-482-11	PIN, CONNECTOR 3P	
		<PHOTO INTERRUPTER>	
PH901	8-749-923-97	PHOTO INTERRUPTER GP2S40K	
**********			
	*A-8275-442-A	SW-41 BOARD, COMPLETE	
		**********	
		<CONNECTOR>	
CN915	1-506-482-11	PIN, CONNECTOR 3P	
		<PHOTO INTERRUPTOR>	
PH903	8-719-991-24	PHOTO TRANSISTOR GP1S23	
**********			
	*A-8275-444-A	SW-42 BOARD, COMPLETE	
		**********	
		<CONNECTOR>	
CN917	1-506-482-11	PIN, CONNECTOR 3P	
		<PHOTO INTERRUPTER>	
PH904	8-719-939-05	PHOTO INTERRUPTER GP1S54	
**********			
	*A-8275-433-A	SW-208 BOARD, COMPLETE	
		**********	
		<CONNECTOR>	
CN801	*1-580-056-21	PIN, CONNECTOR 3P	
		<PHOTO INTERRUPTER>	
PH801	8-749-923-97	PHOTO INTERRUPTER GP2S40K	
**********			
	*A-8275-439-A	SW-210 BOARD, COMPLETE	
		**********	
		<CONNECTOR>	
CN803	1-580-057-11	PIN, CONNECTOR 4P	
		<PHOTO INTERRUPTER>	
PH803	8-749-923-97	PHOTO INTERRUPTER GP2S40K	
		<SWITCH>	
S803	1-572-126-21	SWITCH, PUSH (1 KEY)	
**********			

SW-211 SW-212 SW-213 SW-214 SW-215 SW-216 SW-217
SWITCHING REGULATOR

Ref.No	Part No.	Description			Remark
	*A-8275-434-A	SW-211 BOARD, COMPLETE			
		**********			
		<PHOTO INTERRUPTER>			
PH804	8-749-923-97	PHOTO INTERRUPTER GP2S40K			
PH805	8-749-923-97	PHOTO INTERRUPTER GP2S40K			
		<HARNESS>			
W801	1-648-128-11	PC BOARD, FP-38 FLEXIBLE			
**********					
	*A-8275-436-A	SW-212 BOARD, COMPLETE			
		**********			
		<CAPACITOR>			
C810	1-124-779-00	ELECT	10uF	20%	16V
C811	1-164-004-11	CERAMIC	0.1uF	10%	25V
C812	1-163-038-00	CERAMIC	0.1uF		25V
C813	1-128-530-11	ELECT	33uF	20%	10V
C814	1-126-200-11	ELECT	10uF	20%	16V
C815	1-164-004-11	CERAMIC	0.1uF	10%	25V
		<CONNECTOR>			
CN806	1-569-775-11	PIN, CONNECTOR (SMD) 5P			
CN811	1-580-057-11	PIN, CONNECTOR 4P			
CN813	*1-580-056-21	PIN, CONNECTOR (SMD) 3P			
CN814	*1-580-055-21	PIN, CONNECTOR 2P			
		<DIODE>			
D802	8-719-421-15	DIODE MA8027-L			
		<IC>			
IC810	8-759-998-98	IC LM358D			
		<PHOTO INTERRUPTER>			
PH806	8-749-923-97	PHOTO INTERRUPTER GP2S40K			
PH807	8-749-923-97	PHOTO INTERRUPTER GP2S40K			
		<RESISTOR>			
R802	1-216-295-11	METAL	0	5%	1/10W
R810	1-216-073-00	METAL	10K	5%	1/10W
R811	1-216-065-00	METAL	4.7K	5%	1/10W
R812	1-216-073-00	METAL	10K	5%	1/10W
R813	1-216-089-91	METAL	47K	5%	1/10W
R814	1-216-089-91	METAL	47K	5%	1/10W
R815	1-216-065-00	METAL	4.7K	5%	1/10W
R816	1-216-073-00	METAL	10K	5%	1/10W
R817	1-216-089-91	METAL	47K	5%	1/10W
R818	1-216-089-91	METAL	47K	5%	1/10W
R819	1-216-083-00	METAL	27K	5%	1/10W
R820	1-216-033-00	METAL	220	5%	1/10W
R821	1-216-295-11	METAL	0	5%	1/10W
**********					
	*A-8275-441-A	SW-213 BOARD, COMPLETE			
		**********			
	*3-949-924-01	HOLDER, P SENSOR			
		<CONNECTOR>			
CN808	1-569-775-21	PIN, CONNECTOR 5P			
		<PHOTO INTERRUPTER>			
PH808	8-749-923-97	PHOTO INTERRUPTER GP2S40K			
PH809	8-749-923-97	PHOTO INTERRUPTER GP2S40K			
**********					
	*A-8275-453-A	SW-214 BOARD, COMPLETE			
		**********			
		<CONNECTOR>			
CN809	1-580-055-21	PIN, CONNECTOR 2P			
		<SWITCH>			
S801	1-570-407-11	SWITCH, SLIDE			
**********					
	*A-8275-435-A	SW-215 BOARD, COMPLETE			
		**********			
**********					
	*A-8275-440-A	SW-216 BOARD, COMPLETE			
		**********			
**********					
	*A-8275-452-A	SW-217 BOARD, COMPLETE			
		**********			
		<CONNECTOR>			
CN810	*1-580-056-21	PIN, CONNECTOR (SMD) 3P			
		<PHOTO INTERRUPTER>			
PH810	8-749-923-97	PHOTO INTERRUPTER GP2S40K			
**********					
⚠	*1-413-942-21	SWITCHING, REGULATOR (UP-1200A)			
⚠	*1-413-946-21	SWITCHING, REGULATOR (UP-1200AEPM)			
		**********			
	9-904-821-01	FUSE CLIP			
	*9-907-116-01	HEAT SINK			
	*9-907-118-01	HEAT SINK			
	*9-907-119-01	PC BOARD			
	9-907-120-01	SPACER			
	*9-907-121-01	INSULATION SHEET			
	*9-907-122-01	INSULATION SHEET			
		<CAPACITOR>			
C101	1-136-192-11	CERAMIC	0.33MF	250V	
C102	9-902-038-01	CERAMIC	0.22MF	250V	
C103	9-907-228-01	CERAMIC	470PF	125V	
C104	9-907-095-01	CERAMIC	470PF	125V	
C105	9-907-096-01	CERAMIC	4700PF	250V	

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SWITCHING REGULATOR

Ref.No	Part No.	Description			Remark
C106	9-907-097-01	ELECT	470MF	200V	
C107	9-900-522-01	CERAMIC	2200PF	250V	
C108	9-900-525-01	CERAMIC	0.047MF	400V	
C109	9-907-098-01	CERAMIC	220PF	1KV	
C110	1-130-491-00	CERAMIC	0.047MF	50V	
C111	1-124-122-11	ELECT	100MF	50V	
C112	1-126-967-11	ELECT	47MF	50V	
C113	9-900-525-01	CERAMIC	0.047MF	400V	
C114	9-907-098-01	CERAMIC	220PF	1KV	
C115	1-128-578-91	ELECT	1MF	100V	
C116	1-130-495-00	FILM	0.1MF	50V	
C118	9-907-095-01	CERAMIC	2200PF	250V	
C119	9-907-095-01	CERAMIC	2200PF	250V	
C120	9-907-096-01	CERAMIC	4700PF	250V	
C121	9-907-097-01	ELECT	470MF	200V	
C122	1-130-491-00	CERAMIC	0.047MF	50V	
C123	1-136-189-00	CERAMIC	0.1MF	250V	
C124	1-136-189-00	CERAMIC	0.1MF	250V	
C125	9-907-099-01	ELECT	4.7MF	400V	
C126	1-124-903-11	ELECT	1MF	50V	
C201	9-907-113-01	CERAMIC	1000PF	1KV	
C202	9-907-114-01	ELECT	1000MF	35V	
C203	1-124-906-11	ELECT	4.7MF	50V	
C204	9-907-114-01	ELECT	1000MF	35V	
C205	1-126-965-51	ELECT	22MF	50V	
C207	1-130-483-00	FILM	0.01MF	50V	
C208	9-907-113-01	CERAMIC	1000PF	1KV	
C209	1-126-927-11	ELECT	2200MF	10V	
C210	1-126-927-11	ELECT	2200MF	10V	
C211	1-124-903-11	ELECT	1MF	50V	
C212	1-126-926-11	ELECT	1000MF	10V	
C213	1-126-933-11	ELECT	100MF	10V	
C214	1-126-933-11	ELECT	100MF	10V	
C215	9-907-113-01	CERAMIC	1000PF	1KV	
C216	1-124-557-11	ELECT	1000MF	25V	
C217	1-216-933-11	ELECT	100MF	16V	
C218	1-126-926-11	ELECT	1000MF	10V	
C219	1-126-933-11	ELECT	100MF	10V	
C220	1-130-483-00	FILM	0.01MF	50V	
C222	1-124-122-11	ELECT	100MF	50V	
		<CONNECTOR>			
CN1	9-907-104-01	CONNECTOR 4P			
CN2	9-907-105-01	CONNECTOR 2P			
CN3	9-907-105-01	CONNECTOR 2P			
CN901	1-560-892-00	CONNECTOR 4P			
CN902	1-560-894-00	CONNECTOR 6P			
CN903	1-568-792-11	CONNECTOR 15P			
CN904	1-506-468-11	CONNECTOR 3P			
CN905	1-506-468-11	CONNECTOR 3P			
CN906	1-564-013-31	CONNECTOR 3P			
CN907	1-568-779-11	CONNECTOR 2P			
		<DIODE>			
D101	8-719-500-58	DIODE D3SBA60			
D102	8-719-030-25	DIODE AG01A			
D103	9-904-898-01	DIODE AU02A			
D104	9-907-090-01	DIODE RD47E			
D105	8-719-116-86	DIODE RD24JSB			
D106	8-719-200-02	DIODE 10E-2			
D107	9-900-514-01	DIODE MA165			
D108	9-902-050-01	DIODE ERA15-16			
D109	9-900-514-01	DIODE MA165			
D110	9-902-050-01	DIODE ERA15-16			
D111	9-902-050-01	DIODE ERA15-16			

Ref.No	Part No.	Description			Remark
D201	8-719-501-34	DIODE S3VC40R			
D202	8-719-501-34	DIODE S3VC40R			
D203	8-719-200-02	DIODE 10E-2			
D204	9-900-535-01	DIODE AU02Z			
D205	9-904-797-01	DIODE RK44			
D206	9-904-797-01	DIODE RK44			
D207	8-719-501-34	DIODE S3VC40R			
D208	8-719-160-68	DIODE RD18F			
D209	8-719-982-04	DIODE ERB81-004			
D210	9-904-799-01	DIODE MA2120			
		<FUSE>			
F101	9-907-103-01	FUSE 4A 250V			
F102	9-907-103-01	FUSE 4A 250V			
		<IC>			
IC101	9-904-782-01	IC STR-S6525			
IC102	8-759-977-63	IC MA2830			
IC103	8-749-923-66	IC STR83145			
IC201	8-759-420-19	IC AN1431T			
IC202	8-759-135-80	IC UPC358C			
IC203	8-759-420-19	IC AN1431T			
IC204	8-759-420-19	IC AN1431T			
IC205	8-749-920-43	IC SI-3050CA			
IC206	8-749-921-21	IC SI-3120C			
IC207	8-749-920-43	IC SI-3050CA			
IC208	8-749-920-43	IC SI-3050CA			
		<COIL>			
L101	9-907-102-01	FILTER			
L102	9-907-102-01	FILTER			
L103	9-904-796-01	BEADS CORE			
L104	9-904-796-01	BEADS CORE			
L201	9-902-553-01	BEADS CORE			
L202	9-902-553-01	BEADS CORE			
L203	9-907-112-01	CHOKE COIL			
L204	9-902-553-01	BEADS CORE			
L205	9-907-112-01	CHOKE COIL			
L206	9-902-553-01	BEADS CORE			
		<PHOTO COUPLER>			
PC101	8-749-923-50	PHOTO COUPLER PC111YC			
PC102	8-749-923-50	PHOTO COUPLER PC111YC			
PC201	8-719-161-00	PHOTO COUPLER PS2501			
		<TRANSISTOR>			
Q101	9-904-781-01	TRANSISTOR 2SC2061			
Q201	8-729-900-80	TRANSISTOR DTC114ES			
Q202	8-729-900-80	TRANSISTOR DTC114ES			
Q203	8-729-900-80	TRANSISTOR DTC114ES			
Q204	8-729-900-80	TRANSISTOR DTC114ES			
Q205	8-729-900-80	TRANSISTOR DTC114ES			
		<RESISTOR>			
R101	1-202-719-00	SOLID	1M	1/2W	
R102	9-904-783-01	THERMISTOR	5	25℃	
R103	1-218-642-11	FILM	100K	1W	
R104	1-218-642-11	FILM	100K	1W	
R105	1-260-127-11	CARBON	220K	1/2W	
R106	1-260-127-11	CARBON	220K	1/2W	
R107	1-215-925-11	FILM	22K	3W	
R108	1-215-925-11	FILM	22K	3W	
R109	1-215-882-00	FILM	22	2W	
R110	9-907-093-01	CEMENT	0.15	2W	

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SWITCHING REGULATOR

Ref.No	Part No.	Description		Remark
R111	1-260-064-11	CARBON	1	1/2W
R112	1-260-080-11	CARBON	27	1/2W
R113	1-247-855-31	CARBON	10K	1/4W
R114	1-249-412-11	CARBON	390	1/4W
R115	1-249-437-11	CARBON	47K	1/4W
R116	1-249-411-11	CARBON	330	1/4W
R117	1-249-423-11	CARBON	3.3K	1/4W
R118	1-247-883-00	CARBON	150K	1/4W
R119	1-247-883-00	CARBON	150K	1/4W
R120	1-249-441-11	CARBON	100K	1/4W
R122	1-215-928-11	FILM	68K	3W
R123	1-215-863-11	CARBON	100K	1/4W
R124	1-215-863-11	CARBON	100K	1/4W
R125	1-260-091-11	CARBON	220	1/2W
R126	9-904-783-01	THERMISTOR	5	25℃
R127	1-260-127-11	CARBON	220K	1/2W
R128	1-260-127-11	CARBON	220K	1/2W
R129	1-249-389-11	CARBON	4.7	1/4W
R130	1-247-883-00	CARBON	150K	1/4W
R131	1-249-408-11	CARBON	180	1/4W
R132	1-249-441-11	CARBON	100K	1/4W
R201	1-215-916-00	FILM	680	3W
R202	1-215-916-00	FILM	680	3W
R203	1-260-099-11	CARBON	1K	1/2W
R204	1-247-855-31	CARBON	10K	1/4W
R205	1-247-855-31	CARBON	10K	1/4W
R206	1-249-420-11	CARBON	1.8K	1/4W
R207	1-244-417-11	CARBON	1K	1/4W
R208	1-249-423-11	CARBON	3.3K	1/4W
R209	1-249-415-11	CARBON	680	1/2W
R210	9-902-556-01	METAL	1	1/4W
R211	1-247-855-31	CARBON	10K	1/4W
R212	9-904-801-01	FILM	8.25K	1/4W
R213	1-247-855-31	CARBON	10K	1/4W
R214	1-247-855-31	CARBON	10K	1/4W
R215	1-247-855-31	CARBON	10K	1/4W
R216	1-247-855-31	CARBON	10K	1/4W
R217	1-249-425-11	CARBON	4.7K	1/4W
R218	1-247-855-31	CARBON	10K	1/4W
R219	1-247-855-31	CARBON	10K	1/4W
R220	1-214-736-00	FILM	2K	1/4W
R221	1-214-753-00	FILM	10K	1/4W
R222	1-260-083-11	CARBON	47K	1/2W
R223	1-244-417-11	CARBON	1K	1/4W
R224	1-249-419-11	CARBON	1.5K	1/4W
R225	1-247-855-31	CARBON	10K	1/4W
R226	9-907-107-01	METAL OXIDE	430	1/4W
	9-907-094-01	METAL OXIDE	1.2K	1/4W
R227	9-907-108-01	CARBON	0.22	1/4W
R228	9-907-108-01	CARBON	0.22	1/4W
R229	9-907-109-01	METAL OXIDE	1.3K	1/4W
	9-907-107-01	METAL OXIDE	430	1/4W
R230	1-249-416-11	CARBON	820	1/4W
R231	1-249-414-11	CARBON	560	1/4W
		<RELAY>		
RL201	9-907-115-01	RELAY		
		<TRANSFORMER>		
T101	9-907-100-01	SWITCHING		
T102	9-907-101-01	SWITCHING		

Ref.No	Part No.	Description	Remark
		<VARIABLE RESISTOR>	
VR201	9-907-110-01	RES, VER, CARBON 2K	
VR202	9-907-111-01	RES, VER, CARBON 500	
VR203	1-238-570-11	RES, VER, CARBON 2K	
VR204	1-238-570-11	RES, VER, CARBON 2K	

****

MISCELLANEOUS
****

⚠	*1-413-942-21	SWITCHING REGULATOR (UP-1200A)
⚠	*1-413-946-21	SWITCHING REGULATOR (UP-1200AEPM)
	1-507-195-21	SPECIAL REMOTE CONTROL JACK
	1-541-684-42	MOTOR, DC
	1-543-987-11	HEAD, THERMAL
⚠	1-554-880-11	SWITCH, PUSH (AC POWER) (1 KEY)
⚠	1-580-375-11	INLET 3P
	1-692-855-21	KEYBOARD, FFC WITH
	1-698-019-31	MOTOR, DC (FAN)
	1-751-235-11	CABLE, FLAT (FVM-2)
	1-751-238-11	CABLE, FLAT (FHH-1)
	1-751-239-11	CABLE, FLAT (FHH-2)
	1-765-051-12	WIRE, FLAT TYPE (7 CORE)
	1-765-052-12	WIRE, FLAT TYPE (16 CORE)
	*1-952-970-11	HARNESS, SUB (HMSW42)
	*1-952-971-11	HARNESS, SUB (HMDS)
	*1-952-972-11	HARNESS, SUB (HMPW)
	*1-952-973-11	HARNESS, SUB (SPW)
	*1-952-974-11	HARNESS, SUB (DSSW39)
	*1-952-975-11	HARNESS, SUB (HMSW41)
	*1-952-976-11	HARNESS, SUB (DSSU10)
	*1-952-977-12	HARNESS, SUB (REMOTE)
	*1-952-978-11	HARNESS, SUB (KYPTC)
	1-952-980-11	HARNESS, SUB (AC(IN))
	1-952-981-11	HARNESS, SUB (AC(SW))
	*1-952-982-11	HARNESS (VIF012)
	*1-952-983-11	HARNESS (DC (VAFMDS))
	*1-952-986-12	HARNESS (FMKY)

****

ACCESSORY & PACKING MATERIALS
****

	A-8310-002-D	TRAY ASSY, PAPER
	1-465-508-21	COMMANDER, REMOTE (RM-5100)
⚠	1-534-827-14	CORD, POWER (UP-1200A)
⚠	1-551-631-41	CORD, POWER (UP-1200AEPM)
	1-557-637-11	CABLE, COMMANDER
	*3-183-227-02	TRAY
	*3-183-929-02	CUSHION (UPPPER)
	*3-183-930-02	CUSHION (LOWER)
	3-185-788-01	PLATE ORNAMENTAL
	*3-188-192-01	INDIVIDUL CARTON (UP-1200A)
	*3-188-193-01	INDIVIDUL CARTON (UP-1200AEPM)
	*3-694-922-01	SHEET, PROTECTION
	3-758-132-25	MANUAL, INSTRUCTION (UP-1200A)
	3-758-132-14	MANUAL, INSTRUCTION (UP-1200AEPM)
	3-758-769-12	CARD QUICK REFERENCE (UP-1200AEPM)

****

Ref.No	Part No.	Description	Remark
		HARDWARE LIST	
		*************	
	7-621-255-15	SCREW +P 2X3	
	7-621-259-35	SCREW +P 2.6X5	
	7-621-284-40	SCREW +P 2.6X10	
	7-621-759-75	+PSW, 2.6X10	
	7-682-166-01	SCREW +P 4X20	
	7-682-645-01	SCREW +PS 3X4	
	7-682-647-09	SCREW +PS 3X6	
	7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT	
	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT	
	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
	7-685-645-79	SCREW +BVTP 3X6 TYPE2 IT-3	
	7-685-852-01	SCREW +BVTT 2X5 (S)	
	7-685-862-01	SCREW +BVTT 2.6X6 (S)	
**********			

Ref.No	Part No.	Description	Remark

SECTION 7
ELECTRICAL ADJUSTMENT

7-1. PREPARATION BEFORE ADJUSTMENT (UP-1200A)

The measurement equipment below is used for adjustment.

7-1-1. Equipment Required

1) Monitor television
2) Dual-trace oscilloscope with band of more than 30 MHz and delay mode (Use a 10:1 probe unless otherwise specified.)
3) Frequency counter
4) Signal generator video output terminals (SGA-300 and SGA-130)
5) Digital voltmeter
6) Video print paper
7) Video print cartridge

7-1-2. Connection of the Equipment

As shown in Fig. 7-1, each measurement equipment is connected according to instructions from the input terminal (S video or video) to perform the adjustment. Each input terminal is specified in a signal column by parentheses. If not specified, either input terminal can be used.

Note: For the adjustment specified as an S video input terminal, the product specifications of this unit may not be satisfied when the adjustment is performed by a video input terminal. Be sure to perform the adjustment according to instructions.
When the adjustment is performed using the VTR with an S video output terminal as a signal source, the performance of this unit varies depending on the VTR. Use the pattern generator with a Y/C separation output terminal as far as possible.

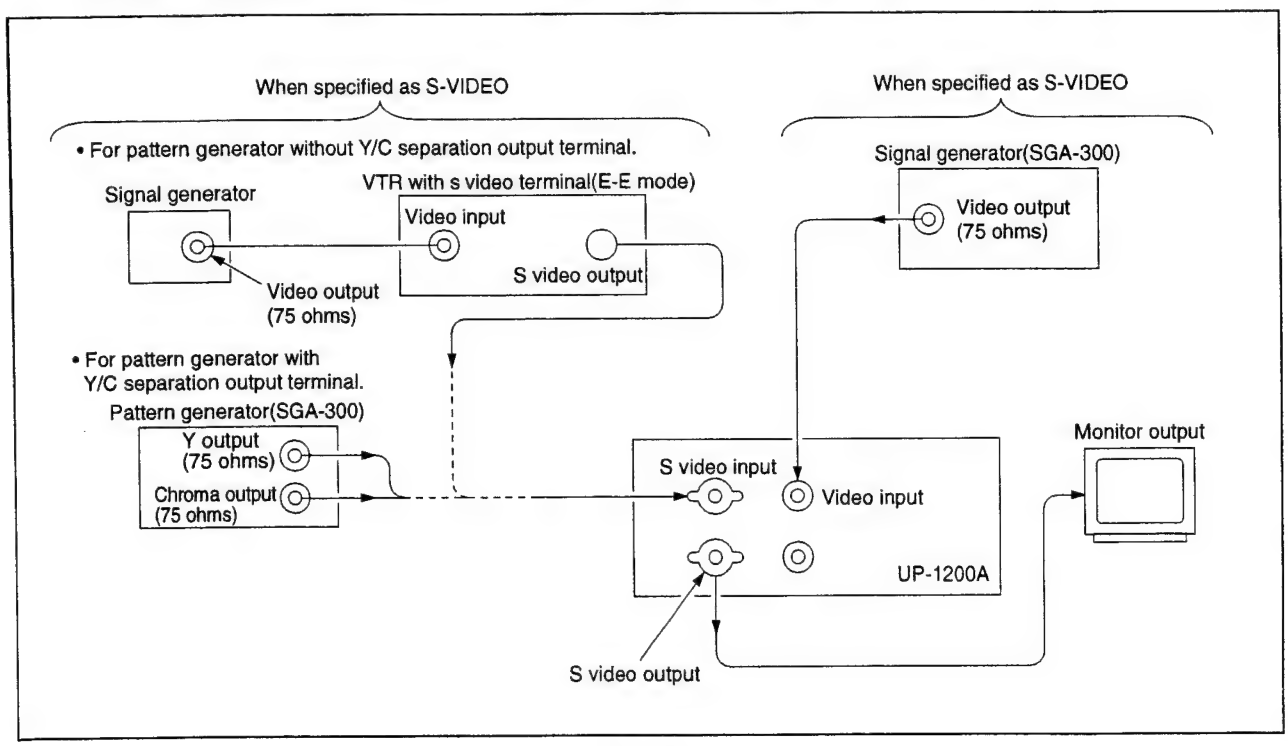


Fig. 7-1.

7-1-3. Confirmation of the Input Signal

The video signal generated from a pattern generator is used for video circuit adjustment as an adjustment signal. Therefore, it is necessary that this video output signal satisfies the required specification.

1. During S video (S VIDEO) input

Connect an oscilloscope to the Y signal terminal of the S video input terminal, and confirm that the sync signal of a Y signal is 286 mV, the amplitude of the video portion is 714 mV, and the setup level is 0 mV. (When the VTR with an S video output terminal is used, confirm that no chroma signal and burst signal remain.) Moreover, connect an oscilloscope to the chroma signal terminal of the S video input terminal, and confirm that the burst signal amplitude of a chroma signal is flat (286 mV) and that the amplitude ratio of a burst signal to a chroma signal is 0.30 : 0.66. The Y signal and chroma signal used for the adjustment are shown in Fig. 7-2.

The setup level is the potential difference between the black and pedestal levels.

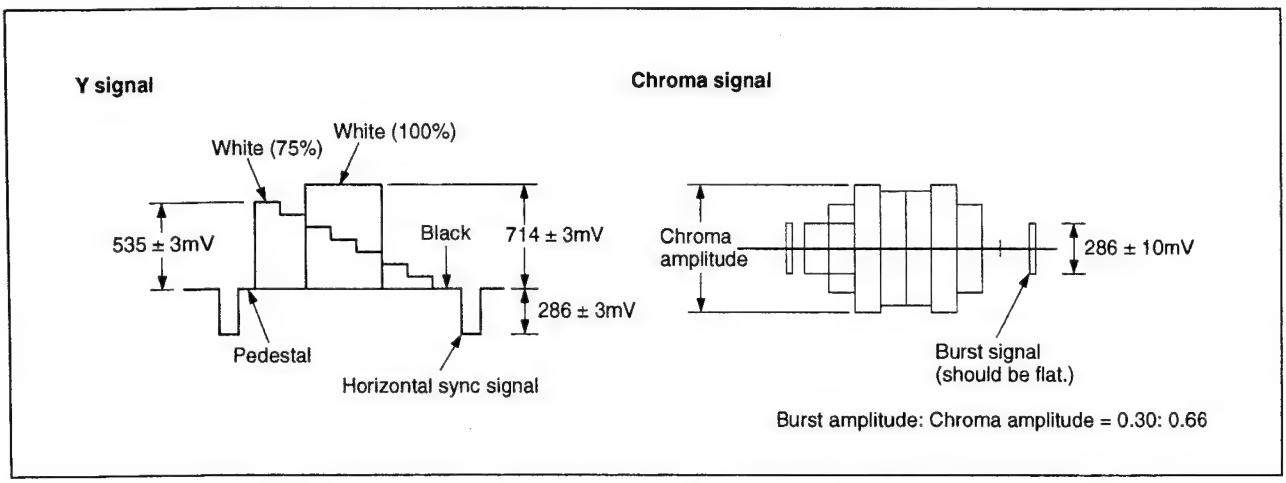


Fig. 7-2. Color-Bar Signal in Pattern Generator (during 75-ohm Termination)

2. During video (VIDEO) input

Connect an oscilloscope to the video input terminal, and confirm that the sync signal amplitude of a video signal is 286 mV, the amplitude of the video portion is 714 mV, the setup level is 0 mV, the amplitude of a burst signal is flat (286 mV), and the level ratio of a burst signal to a "red" signal is 0.30 : 0.66.

The video signal (color-bar) used for the adjustment is shown in Fig. 7-3.

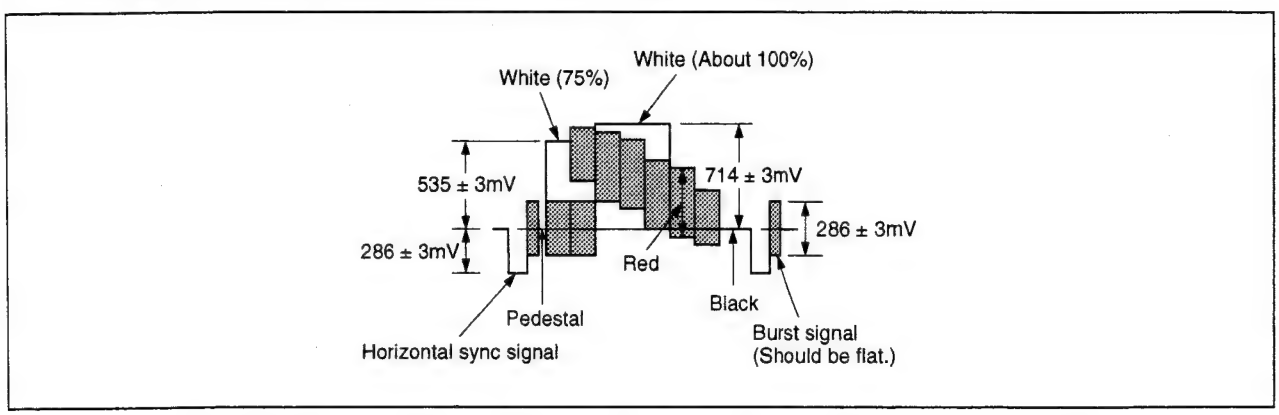


Fig. 7-3. Color-Bar Signal in Pattern Generator (during 75-ohm Termination)

7-1-4. How to Operate Adjustment Remote Controller RM-95 (J-6082-053-A)

For the connection of adjustment remote controller RM-95, insert the RM-95 terminal into J101 LANC jack on the VA-76 board in the UP-1200 series.

Before performing each adjustment, reset the corresponding protector as shown in the table below.

Page	6	Data	80	Address	00

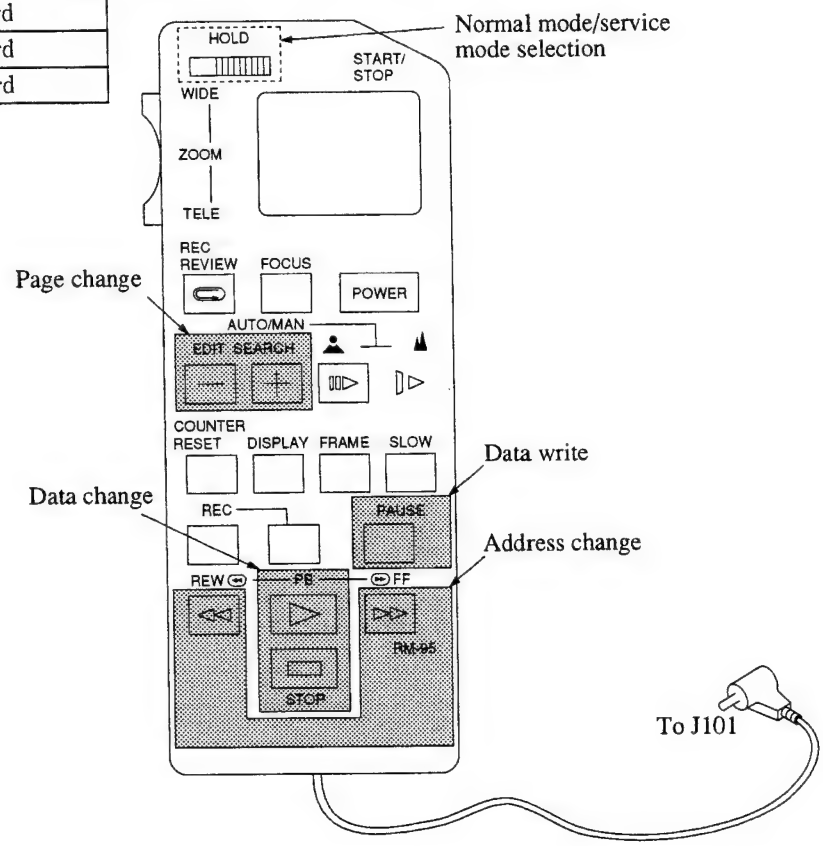
However, any reset is not required during continuous adjustment. Press the PAUSE button for every adjustment item and write each data.

1. Menu setting

The menu is set in the initial state (refer to the table below).

Number of prints	1
Memo	No memo print
Memory setting	Standard
Print setting	Standard
Picture quality setting	Standard

Adjustment remote controller RM-95 (J-6082-053-A)



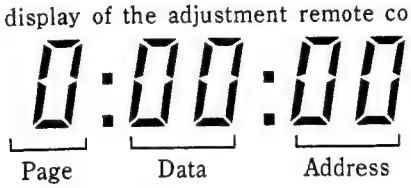
7-1-5. Service Mode

1. Setting the service mode

The service mode is classified into an adjustment mode that adjusts the EVR and a test mode that displays the state of the unit.

The test mode and adjustment mode are entered if the adjustment remote controller (with the HOLD switch set to HOLD) is connected.

LCD display of the adjustment remote controller



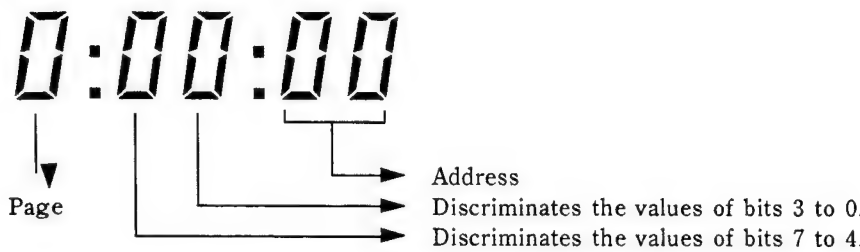
2. Video circuit adjustment

When F page data was erased during EE-PROM (IC309 on the VA-76 board) replacement, enter the initial value of the F page and adjust the video circuit.
For details of the initial value, refer to the "F Page Address Book" in "Service Man Mode".

3. Discrimination of the bit value

In subsequent items, it is necessary to discriminate the bit value by the display data of an adjustment remote controller. On whether the bit value is "1" or "0", discriminate according to the data shown in the table below.

Adjustment remote controller display



	Remote controller display	Bit value			
		Bit 3 or 7	Bit 2 or 6	Bit 1 or 5	Bit 0 or 4
	0	0	0	0	0
	1	0	0	0	1
	2	0	0	1	0
	3	0	0	1	1
	4	0	1	0	0
	5	0	1	0	1
	6	0	1	1	0
	7	0	1	1	1
Ⓐ→	8	1	0	0	0
	9	1	0	0	1
	A(*A*)	1	0	1	0
	B(*b*)	1	0	1	1
	C(*c*)	1	1	0	0
	D(*d*)	1	1	0	1
Ⓑ→	E(*E*)	1	1	1	0
	F(*F*)	1	1	1	1

(Example) When the display data of the remote controller is "8E", the values of bits 7 to 4 can be discriminated by column Ⓐ, and the values of bits 3 to can be discriminated by column Ⓑ.

Command name	Function	Command button
Page Up	Increments the page by one.	Edit Search (+)
Page Down	Decrements the page by one.	Edit Search (−)
Address Up	Increments the address by one.	Fast Forward (▶▶)
Address Down	Decrements the address by one.	Rewind (◀◀)
Data Up	Increments the data by one.	Play Back (▷)
Data Down	Decrements the data by one.	Stop (□)
Store	Writes data in an EE-PROM RAM.	Pause (II)

4. Entering the test signal (Transmission to memory control)

LCD display of the adjustment remote controller

1) Insert the RM-95 into the control terminal (J-1 on the VA-14 board).
2) Set the HOLD switch of the RM-95 to the service mode. (Usually set to the service mode.)
3) Turn on the power of the UP-1800/1850 and set each signal as shown below.

※ The input signal is a non-signal.

[Color-bar signal]

Page	7	Data	2b	Address	20

[Stairstep signal(H)]

Page	7	Data	27	Address	20

[Stairstep signal(V)]

Page	7	Data	28	Address	20

[Ramp signal(H)]

Page	7	Data	29	Address	20
Page	7	Data	2C	Address	20

[Ramp signal(V)]

Page	7	Data	2A	Address	20

5. Infrared remote controller check

Page	7	Data		Address	07

※ The reception-time state of an infrared remote controller can be confirmed by the number of display data items.

Data	Reception-time state	Data	Reception-time state
01	Power supply	42	MENU
10	SOURCE/MEMORY	43	EXEC
11	Memory IN	14	STOP
13	Print	1C	MEMORY PAGE
30	UP	5D	Print quantity +
31	DOWN	5E	Print quantity −
32	LEFT	3C	Color adjustment
33	RIGHT	4B	MULTI PICTURE

6. Key input check

Page	7	Data		Address	11

Data	Key input	Data	Key input
09	SOURCE/MEMORY	14	RIGHT
0A	MEMORY IN	11	MENU
0B	PRINT	12	EXEC
15	UP	01	STOP
16	DOWN	0C	MEMORY/PAGE
13	LEFT		

※ The status of each key can be confirmed in real time.

7. Key input check (edge)

Page	7	Data		Address	12

※ Write the data below and press the PAUSE button. The state obtained when the key was pressed is then entered.

Data	Key input	Data	Key input
10	SOURCE/MEMORY	33	RIGHT
11	MEMORY IN	42	MENU
13	PRINT	43	EXEC
30	UP	14	STOP
31	DOWN	1C	MEMORY/PAGE
32	LEFT		

8. LED control check

Page	7	Data		Address	14

※ The LED is made turned on forcibly.

Data	Operation
00	Normal
01	Only the error LED ( ) lights.
02	Only the print LED ( ) lights.

9. Buzzer sound check

Page	7	Data		Address	16

※ Write any data and press the PAUSE button. The "buzzer" then sounds.

10. Sharpness adjustment

Page	7	Data		Address	40

Data	Level position
F9	MIN
00	CENTER
07	MAX

※ Write the above data and press the PAUSE button. The sharpness data is then changed.

11. Picture quality set check

Page	7	Data		Address	

Address		
45	B	Offset level
46	G	
47	R	
48	B	GAIN
49	G	
4A	R	

Offset data	Level position	Gain data
08	MIN	3F
00	CENTER	80
38	MAX	E3

12. [Mode control: ROM Ver]

Page	7	Data		Address	01

※ Indicates the ROM version during mode control.

13. THRU/EE check

Page	7	Data		Address	72

Data	
01	EE
02	THRU

14. Test pattern memory write check

Page	7	Data		Address	20

Data	Text pattern
27	Stairstep (H)
28	Stairstep (V)
29	Ramp (H)
2A	Ramp (V)
2B	Color-bar (false)

15. Input signal selection check

Page	7	Data		Address	71

Data	Input signal
01	VIDEO
02	S VIDEO

16. Motor single-drive check

(1) Head motor

Page	8	Data		Address	1A

Data	
00	Stop
01※1	Head position UP
02※2	Head position DOWN
08	Home position

※1 The head position changes by one step every time the PAUSE button of the RM-95 is pressed.

※2 Do not perform the DOWN operation in head position-1. This may destroy the unit. If so, turn off the AC power immediately.

(2) Ribbon motor (Roller motor)

Page	8	Data		Addres	1A

Data	
00	Stop
03※1	Roller position UP
04※2	Ribbon winding (continuous)

※1 The roller position changes by one step every time the PAUSE button of the RM-95 is pressed.

※2 Data 04 is continuously driven when the PAUSE button is pressed.

(3) Stepping motor, fan motor, delivery arm position

Page	8	Data		Address	1A

Data	
00	Stop
05	Stepping motor rotation (continuous)
06	Stepping motor reverse-rotation (continuous)
09	Fan motor rotation
0B	Delivery arm position UP※

※ The delivery arm position changes by one step every time the PAUSE button is pressed.

17. Roller position data

Page	8	Data		Address	04

Data	Position
E0	NULL
00	P0 position
02	P1 position
04	P2 position

18. Paper delivery arm position data

Page	8	Data		Address	05

Data	Position
0E	NULL
00	Home position
01	Print position

19. Mechanical control ROM version check

Page	8	Data		Address	01

※ Indicates the ROM version during mechanical control.

20. F page address book

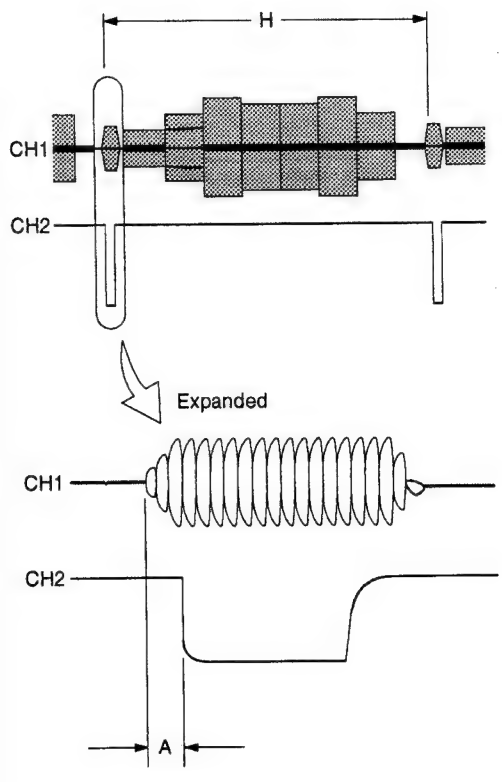
Adjustment address	Name	Function ( ) is the adjustment voltage output terminal.	
00			
01			
02			
03			
04			
05			
06			
07			
08			
09			
0A			
0B			
0C			
0D			
0E			
0F			
10			
11	HUECONT	Decoder hue adjustment	[Q329-E]
12	CCONT	Decoder color adjustments 1 and 2	[Q329-E]
13	SHPCT	Decoder sharpness adjustment	[IC311 ⑨]
14	G-GAIN	Green gain adjustment	
15	R-GAIN	Red gain adjustment	
16	B-GAIN	Blue gain adjustment	
17	WH-REF	White REF level adjustment	[R340, 341]
18	BLACK-REF	ABL adjustment 2	[Q323-E]
19	AGCC-OST	Chroma Y AGC Offset	
1A	D/A	D/A REF adjustment	[FL105 or CN501 ①]
1B	AGC OST	AGC level adjustment	[CN101 ㉓]
1C			
1D			
1E			
1F			
20	ERG	Encoder white balance adjustment	[FL105, CN502 ①]
21	DM-LEV		
22	COLOR	INT/EXT detection level adjustment	[IC106 ⑦]
23	CHROMA LEV	Encoder chroma level adjustment	[CN502 ①]
24	BURST LEV	Encoder burst level adjustment	[FL105 or CN501 ①]
25	W-POSIT	AFC phase adjustment	
26			
27	CHAR	OSD level adjustment	[FL105, CN502 ①]
28	ABL OST	ABL adjustment 1	[IC302 ①, ②]
29	TPADJ	Timing pulse adjustment	
2A	EBG	Encoder white balance adjustment	[FL105 or CN501 ①]
2B	HUE	Encoder hue adjustment	
2C			
2D			
2E			
2F			

7-2. VIDEO CIRCUIT ADJUSTMENT (VA-76 BOARD)

7-2-1. INT/EXT Detection Level Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Input signal: Color-bar (VIDEO) · Measurement equipment: Digital voltmeter	Measurement point: Pin ⑦ of IC106 or positive ("+") side of C103 2.0 ± 0.05 V DC	Adjustment page	F
		Adjustment address	22

7-2-2. BGP Phase Adjustment

Conditions for adjustment	Spec.	Adjustment
· Input signal: Color-bar (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: Pin ㉜ of C376 or IC311 (CH1) Pin ⑯ of IC311 (CH2)  A = 0.77 ± 0.07 μ sec	◐ RV304

7-2-3. APC Free-Running Frequency Adjustment

Conditions for adjustment	Spec.	Adjustment
· Input signal: Non-signal (with the input cable removed) · Measurement equipment: Frequency counter	Measurement point: Emitter of Q334 or R472 Shortcircuit C358 to ground and C376 to ground. f = 3.579545 MHz ± 20Hz	⊘ RV301

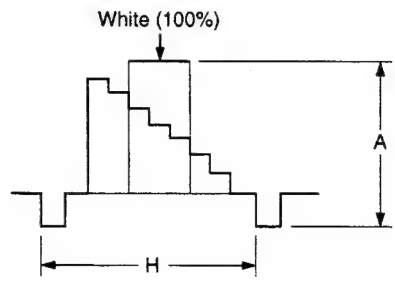
7-2-4. INT Sync Generator Frequency Adjustment

Conditions for adjustment	Spec.	Adjustment
· Input signal: Non-signal (with all the input cables removed) · Measurement equipment: Frequency counter	Measurement point: Pin ㉔ of IC130 or pin ① of IC128 f = 3.579545 MHz ± 20 Hz	⊘ CT102

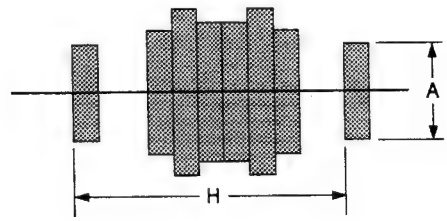
7-2-5. AFC Error Voltage Adjustment

Conditions for adjustment	Spec.	Adjustment
· Input signal: Non-signal (with all the input cables removed) · Measurement equipment: Digital voltmeter	Measurement point: CC101 or R110 − 0.5 ± 0.2 V DC	⊘ CT101

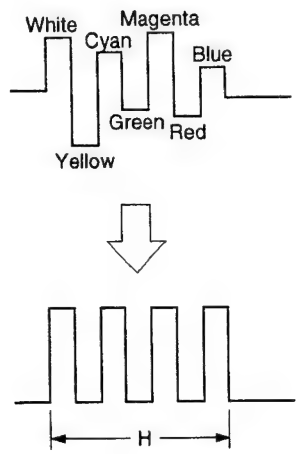
7-2-6. Y/C Separation Y-Level Adjustment

Conditions for adjustment	Spec.	Adjustment
· Input signal: Color-bar (VIDEO) · Measurement equipment: Oscilloscope	Measurement point: Emitter of Q116 or R218  A = 1.00 ± 0.03 V p-p	⊘ RV302

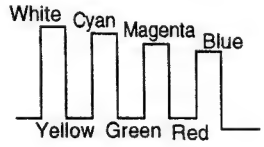
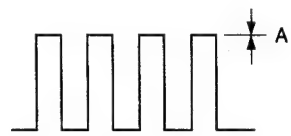
7-2-7. Y/C Separation Chroma-Level Adjustment

Conditions for adjustment	Spec.	Adjustment
· Input signal: Color-bar (VIDEO) · Measurement equipment: Oscilloscope	Measurement point: Emitter of Q121 or R229  A = 286 ± 30 mV p-p	RV303

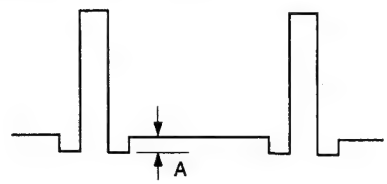
7-2-8. Decoder Hue Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Input signal: Color-bar 75% (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: Emitter of Q329  The peak-value colors (white, cyan, magenta, and blue), and the bottom-value colors (yellow, green, and red) should flat and linear.	Adjustment page Adjustment address	F 11

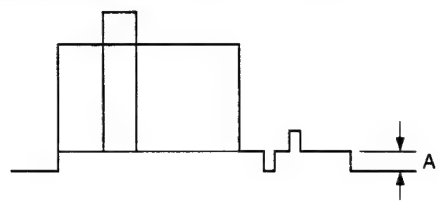
7-2-9. Decoder Color (1) Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Input signal: Color-bar 75% (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: Emitter of Q329   A = 0 ± 50 mV (Adjust so that the difference in level of each color is zero ("0").) If the difference in level exists in each color, readjust the hue.	Adjustment page	F
		Adjustment address	12

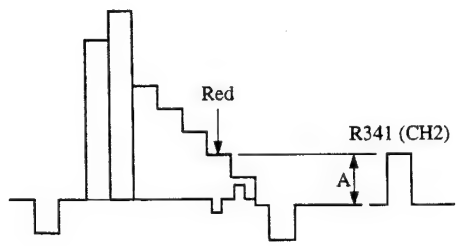
7-2-10. ABL Adjustment (1)

Conditions for adjustment	Spec.	Adjustment	
· Input signal: Black burst (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: Emitter of Q302  A = 20 ± 20 mV	Adjustment page	F
		Adjustment address	28
		DATA	80

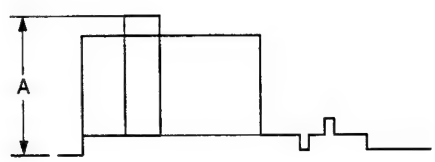
7-2-11. ABL Adjustment (2)

Conditions for adjustment	Spec.	Adjustment	
· Input signal: Color-bar (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: Emitter of Q323  A = 20 ± 20 mV	Adjustment page	F
		Adjustment address	18
		DATA	80

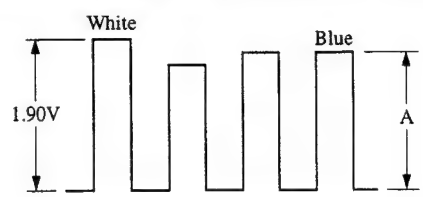
7-2-12. White REF Level Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Input signal: Color-bar (only Y)(S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: R348 (CL304) (red) (CH1) R341 (white) (CH2)  Adjust so that the red (R348 or CL304) of a Y signal component coincides with the peak level of a white REF pulse (R341). A = Within 20 mV	Adjustment page Adjustment address	F 17

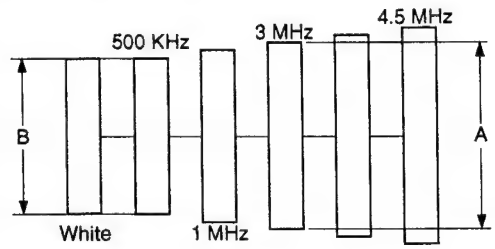
7-2-13. AGC Level Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Input signal: Color-bar (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: Pin ㉓ of CN101 (G OUT)  A = 1.90 ± 0.05 V p-p	Adjustment page Adjustment address	F 1B

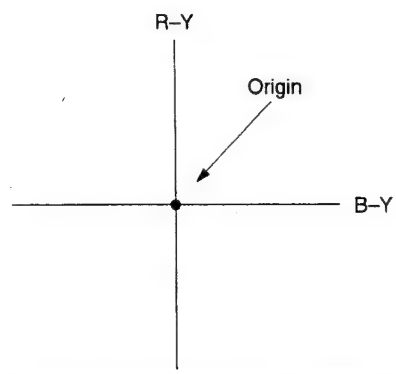
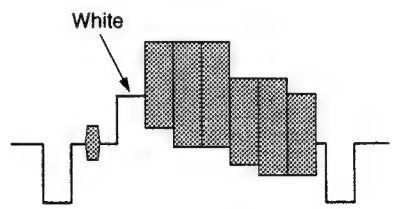
7-2-14. Decoder Color (2) Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Input signal: Color-bar (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: Pin ㉑ of CN101 (B OUT)  A = 1.95 ± 0.05 V p-p	Adjustment page Adjustment address	F 12

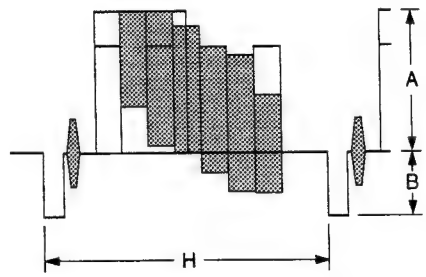
7-2-15. Decoder Sharpness Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Input signal: Multi-burst (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: Pin ⑨ of IC311  A/B = 1.15 ± 0.05 (Level ratio of 1 MHz to 4.5 MHz)	Adjustment page	F
		Adjustment address	13

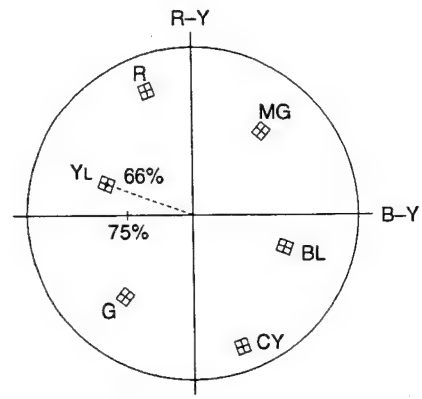
7-2-16. Encoder White Balance Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Mode: Input picture · Input signal: Multi-burst (S VIDEO) · Measurement equipment: Oscilloscope Vectorscope 75-ohm termination	Measurement point: Video output terminal · For vectorscope  The white luminescent spot should coincide with the origin. · For oscilloscope  Adjust so that the chroma signal component (3.58 MHz) that leaks to the white portion of an output waveform is minimum.	Adjustment page	F
		Adjustment address	20(ERG) 2A(EBG)

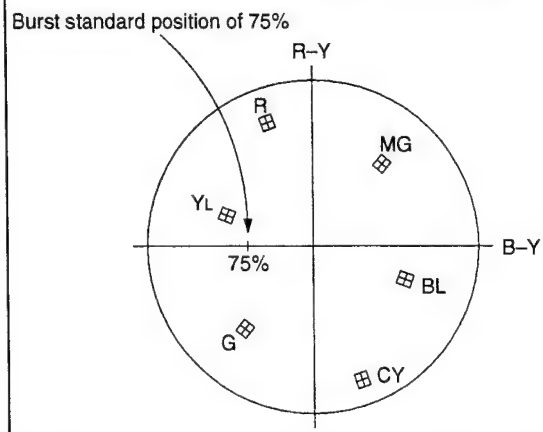
7-2-17. D/A REF Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Mode: Input picture · Input signal: Color-bar (VIDEO) · Measurement equipment: Oscilloscope	Measurement point: Video output terminal (75-ohm termination)  A = 659 ± 20 mV B = 286 ± 30 mV	Adjustment page: F Adjustment address: 1A	

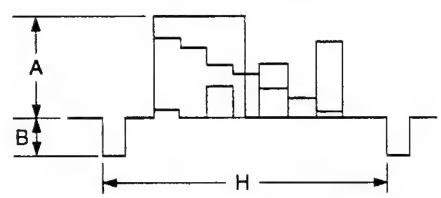
7-2-18. Encoder Chroma Level Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Mode: Input picture · Input signal: Color-bar (VIDEO) · Measurement equipment: Vectorscope · Video output terminal in 75-ohm termination	Measurement point: FL105 (VIDEO OUT) or Pin ① of CN502  · 66% of length between center of yellow "⊞" and cross point of R–Y and B–Y axes.	Adjustment page: F Adjustment address: 23	

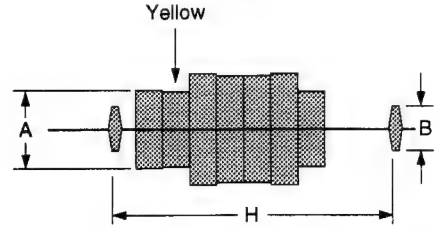
7-2-19. Encoder Color Burst Level Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Mode: Input picture · Input signal: Non-signal · Measurement equipment: Vectorscope	Measurement point: Video output (in 75-ohm termination)  Set the luminescent spot in the burst level to the 75% position within one luminescent spot.	Adjustment page	F
		Adjustment address	24

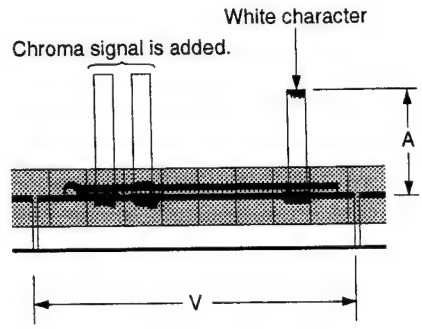
7-2-20. S Video Output Y Level Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Mode: Input picture · Input signal: Digital Color-bar(※) (VIDEO) · Measurement equipment: Oscilloscope · S video output Y terminal in 75-ohm termination	Measurement point: Pin ② of S video output terminal or Pin ③ of CN502 (Y)  A = 659 ± 20 mV B = 286 ± 30 mV	Adjustment page	7
		Adjustment address	20
		Data	37
		※ The digital color-bar signal is displayed when it is set as described above by RM-92.	

7-2-21. S Video Output Chroma Level Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Mode: Input picture · Input signal: Color-bar (VIDEO) · Measurement equipment: Oscilloscope · S video output C terminal in 75-ohm termination	Measurement point: Pin ④ of S video output terminal  A = 408 ± 30 mV (Yellow) B = 286 ± 30 mV	Adjustment page	7
		Adjustment address	20
		Data	37
		※ The digital color-bar signal is displayed when it is set as described above by RM-92.	

7-2-22. OSD Level Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Mode: Input picture · Input signal: Non-signal · Measurement equipment: Oscilloscope · Composite video output C terminal in 75-ohm termination	Measurement point: Video output terminal (75-ohm termination)  A = 500 ± 30 mV	Adjustment page	F
		Adjustment address	27

UP-1200AEPM

7-1. PREPARATION BEFORE ADJUSTMENT

The measurement equipment below is used for adjustment.

7-1-1. Equipment Required

1) Monitor television
2) Dual-trace oscilloscope with band of more than 30 MHz and delay mode
   (Use a 10:1 probe unless otherwise specified.)
3) Frequency counter
4) Signal generator video output terminals (TSG-131, TSG-131A, TSG-1411 or SG-408P)
5) Digital voltmeter
6) Video print paper
7) Video print cartridge

7-1-2. Connection of the Equipment

As shown in Fig. 7-1, each measurement equipment is connected according to instructions from the input terminal (S video or video) to perform the adjustment. Each input terminal is specified in a signal column by parentheses. If not specified, either input terminal can be used.

Note: For the adjustment specified as an S video input terminal, the product specifications of this unit may not be satisfied when the adjustment is performed by a video input terminal. Be sure to perform the adjustment according to instructions.
When the adjustment is performed using the VTR with an S video output terminal as a signal source, the performance of this unit varies depending on the VTR. Use the pattern generator with a Y/C separation output terminal as far as possible.

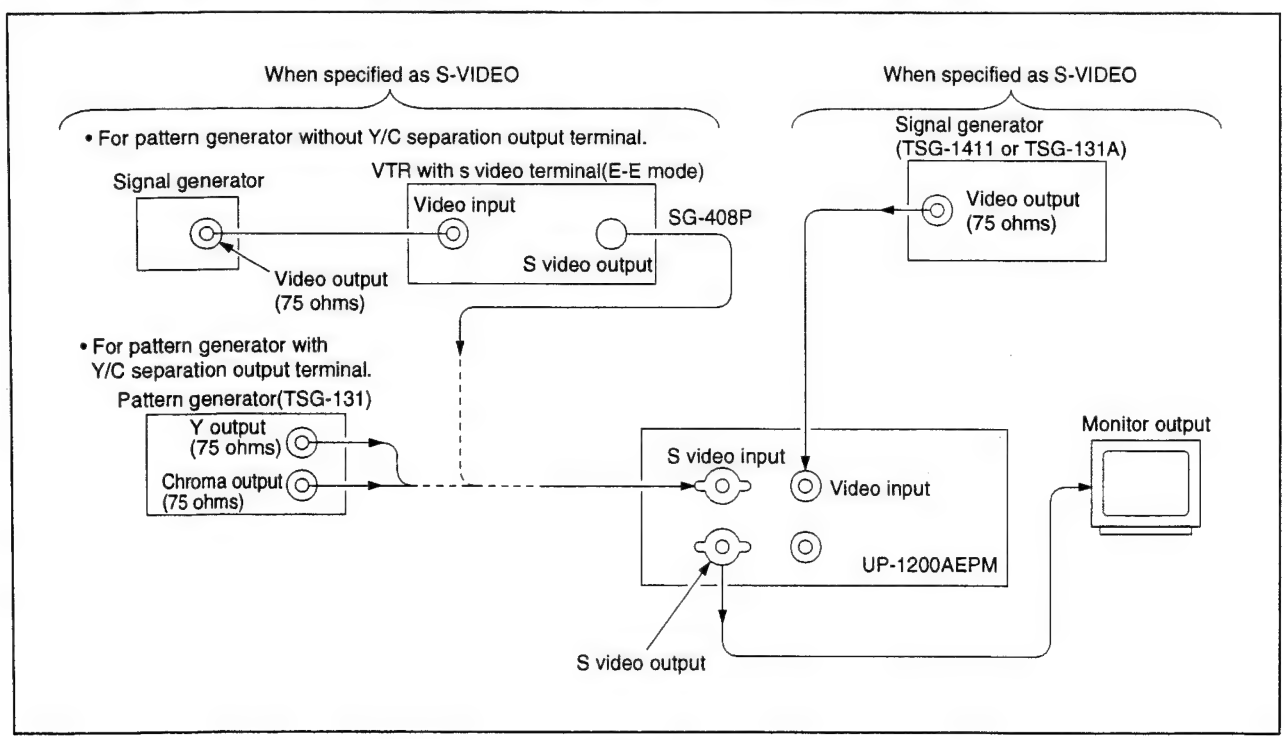


Fig. 7-1.

7-1-3. Confirmation of the Input Signal

The video signal generated from a pattern generator is used for video circuit adjustment as an adjustment signal. Therefore, it is necessary that this video output signal satisfies the required specification.

1. During S video (S VIDEO) input

Connect an oscilloscope to the Y signal terminal of the S video input terminal, and confirm that the sync signal of a Y signal is 300 mV, the amplitude of the video portion is 700 mV, and the setup level is 0 mV. (When the VTR with an S video output terminal is used, confirm that no chroma signal and burst signal remain.) Moreover, connect an oscilloscope to the chroma signal terminal of the S video input terminal, and confirm that the burst signal amplitude of a chroma signal is flat (300 mV) and that the amplitude ratio of a burst signal to a chroma signal is 0.30 : 0.66. The Y signal and chroma signal used for the adjustment are shown in Fig. 7-2.

The setup level is the potential difference between the black and pedestal levels.

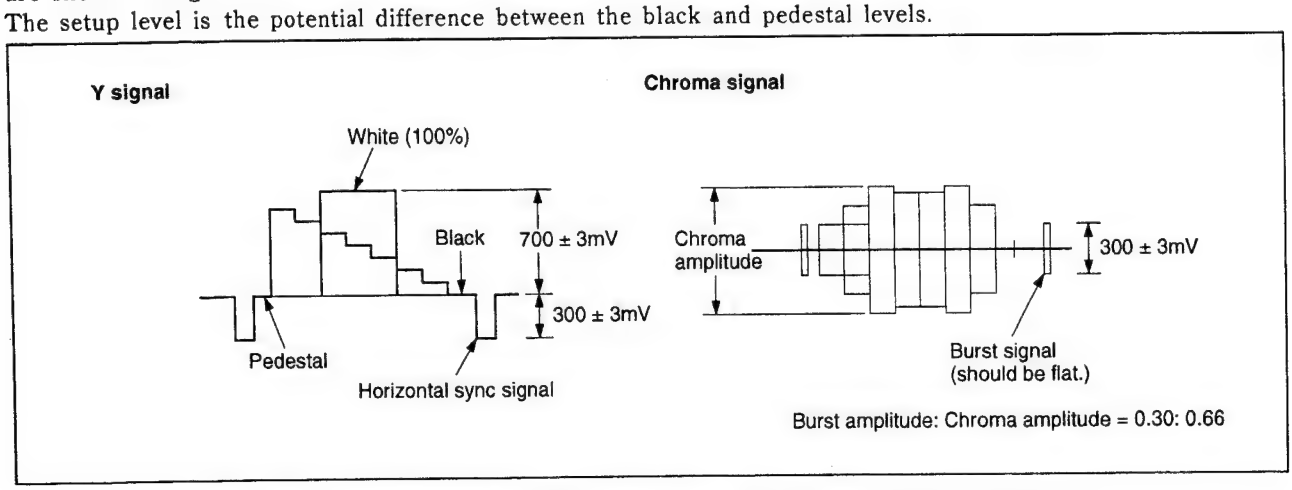


Fig. 7-2. Color-Bar Signal in Pattern Generator (during 75-ohm Termination)

2. During video (VIDEO) input

Connect an oscilloscope to the video input terminal, and confirm that the sync signal amplitude of a video signal is 300 mV, the amplitude of the video portion is 700 mV, the setup level is 0 mV, the amplitude of a burst signal is flat (300 mV), and the level ratio of a burst signal to a "red" signal is 0.30 : 0.66.

The video signal (color-bar) used for the adjustment is shown in Fig. 7-3.

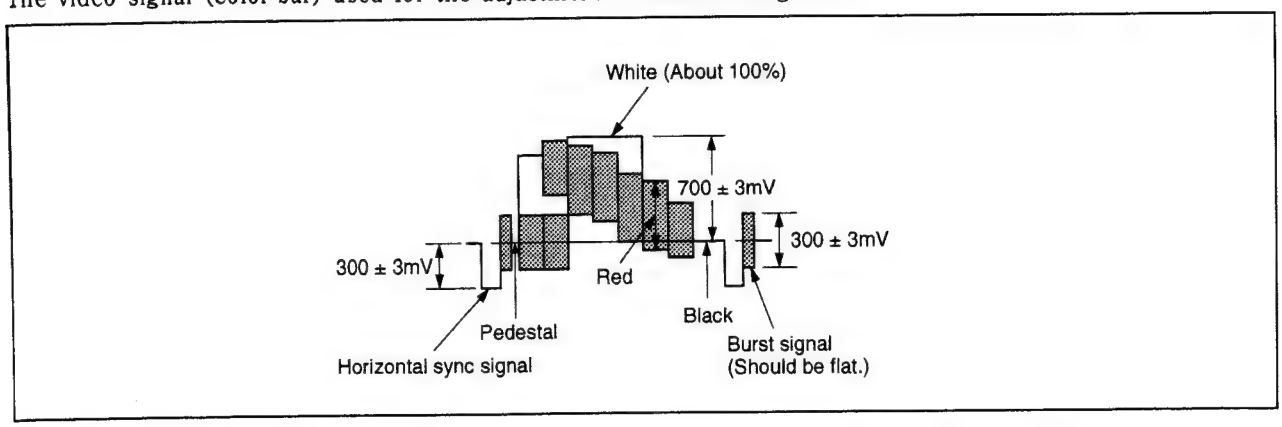


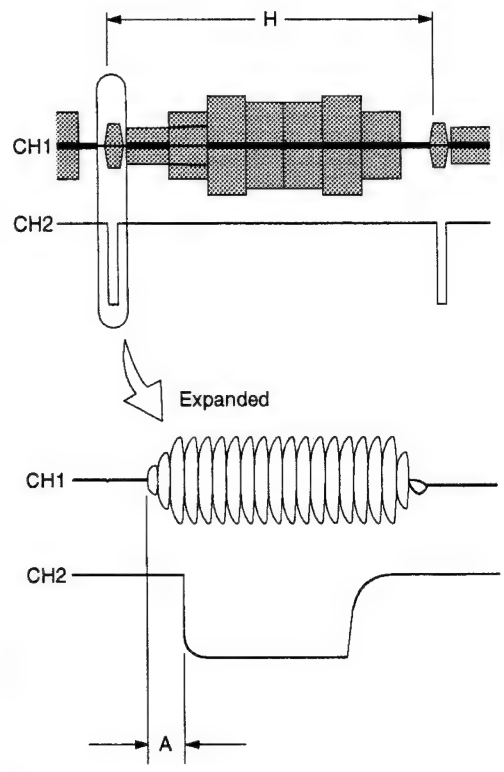
Fig. 7-3. Color-Bar Signal in Pattern Generator (during 75-ohm Termination)

7-2. VIDEO CIRCUIT ADJUSTMENT (VA-76 (B) BOARD)

7-2-1. INT/EXT Detection Level Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Input signal: Color-bar (VIDEO) · Measurement equipment: Digital voltmeter	Measurement point: Pin ⑦ of IC106 or positive ("+") side of C103 2.0 ± 0.05 V DC	Adjustment page	F
		Adjustment address	22

7-2-2. BGP Phase Adjustment

Conditions for adjustment	Spec.	Adjustment
· Input signal: Color-bar (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: Pin ㉜ of C376 or IC311 (CH1) Pin ⑯ of IC311 (CH2)  A = 0.77 ± 0.07 μ sec	◐ RV304

7-2-3. APC Free-Running Frequency Adjustment

Conditions for adjustment	Spec.	Adjustment
· Input signal: Non-signal (with the input cable removed) · Measurement equipment: Frequency counter	Measurement point: Emitter of Q334 or Q328 Shortcircuit IC311 ㉓ pin to ground and IC311 ㉛ pin to ground. f = 4.433619 MHz ± 20Hz	RV301

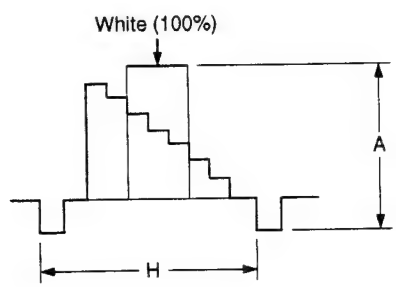
7-2-4. INT Sync Generator Frequency Adjustment

Conditions for adjustment	Spec.	Adjustment
· Input signal: Non-signal (with all the input cables removed) · Measurement equipment: Frequency counter	Measurement point: Pin ㉔ of IC130 or pin ① of IC128 f = 4.433619 MHz ± 20 Hz	CT102

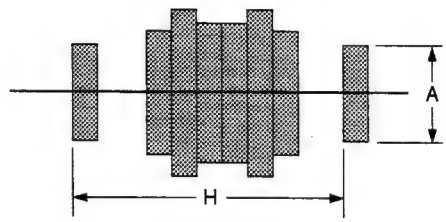
7-2-5. AFC Error Voltage Adjustment

Conditions for adjustment	Spec.	Adjustment
· Input signal: Non-signal (with all the input cables removed) · Measurement equipment: Digital voltmeter	Measurement point: CC101 − 0.5 ± 0.2 V DC	CT101

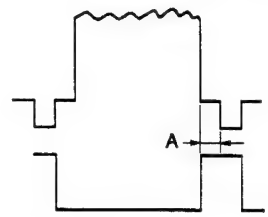
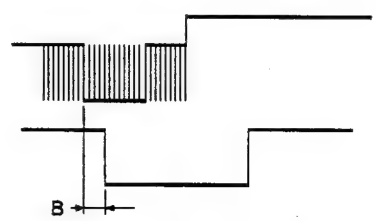
7-2-6. Y/C Separation Y-Level Adjustment

Conditions for adjustment	Spec.	Adjustment
· Input signal: Color-bar (VIDEO) · Measurement equipment: Oscilloscope	Measurement point: Emitter of Q116 or Q218  A = 1.00 ± 0.03 V p-p	RV302

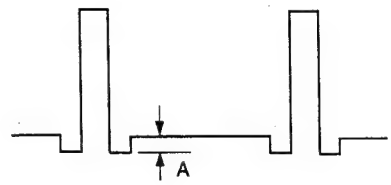
7-2-7. Y/C Separation Chroma-Level Adjustment

Conditions for adjustment	Spec.	Adjustment
· Input signal: Color-bar (VIDEO) · Measurement equipment: Oscilloscope	Measurement point: Emitter of Q121  A = 300 ± 30 mV p-p	RV303

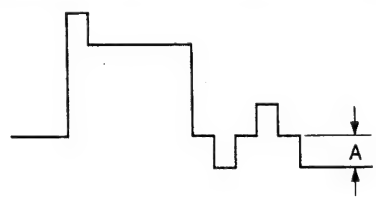
7-2-8. SYNC SEPA Phase Check

Conditions for adjustment	Spec.	Adjustment
· Input signal: Color-bar (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: IC110 ⑨ pin (Phase check of H SYNC and HD PULSE)  A = 11.5 ± 1.00 μ sec Measurement point: CN102 ⑧ pin (Phase check of V SYNC and VD PULSE)  B = 49.0 ± 3.0 μ sec	

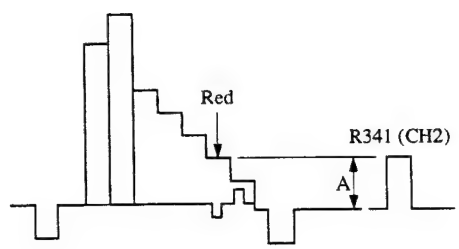
7-2-9. ABL Adjustment (1)

Conditions for adjustment	Spec.	Adjustment
· Input signal: Black burst (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: Emitter of Q302  A = 20 ± 20 mV	Adjustment page: F Adjustment address: 28 DATAE 80

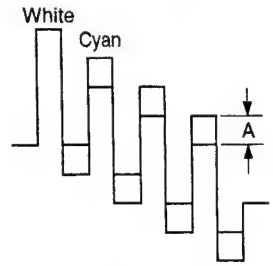
7-2-10. ABL Adjustment (2)

Conditions for adjustment	Spec.	Adjustment
· Input signal: Color-bar (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: CN101 ㉓ pin or C348  A = 20 ± 20 mV	Adjustment page: F Adjustment address: 18 DATAE 80

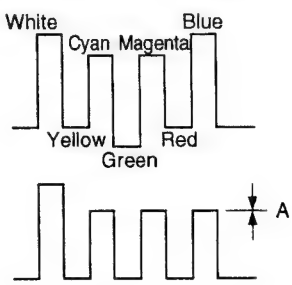
7-2-11. White REF Level Adjustment

Conditions for adjustment	Spec.	Adjustment
· Input signal: Color-bar (only Y) (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: R348 (CL304) (red) (CH1) R341 (white) (CH2)  Adjust so that the red (R340 or CL304) of a Y signal component coincides with the peak level of a white REF pulse (R341). A = Within 20 mV	Adjustment page: F Adjustment address: 17

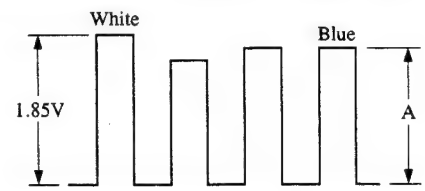
7-2-12. Decoder DL AMP DAT Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Input signal: Color-bar (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: CN101 ㉑ pin  A = 0 ± 100 mV Adjust address 2B and DL303 alternatly.	Adjustment page Adjustment address :DL303	F 2B

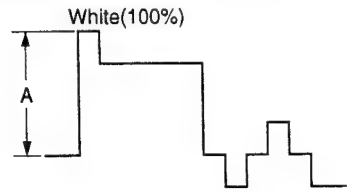
7-2-13. Decoder Color (1) Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Input signal: Color-bar 75% (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: CN101 ㉑ pin  A = 0 ± 50 mV (Adjust so that the difference in level of each color is zero ("0").) If the difference in level exists in each color, readjust the hue.	Adjustment page Adjustment address	F 12

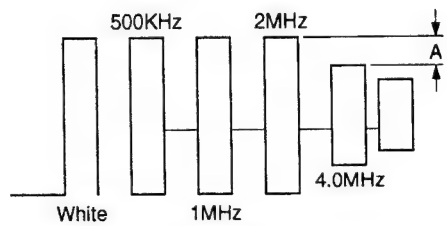
7-2-14. Decoder Color (2) Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Input signal: Color-bar (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: Pin ㉑ of CN101 (B OUT)  A = 1.95 ± 0.05 V p-p	Adjustment page Adjustment address	F 12

7-2-15. AGC Level Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Input signal: Color-bar (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: CN103 ㉓ pin (G OUT)  A = 1.85 ± 0.05 V p-p	Adjustment page Adjustment address	F 1B

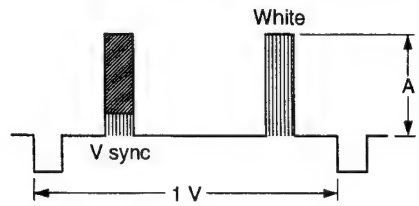
7-2-16. Decoder Sharpness Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Input signal: Multi-burst (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: IC301 ⑨ pin (The levels of 1 MHz and 4 MHz should be the same.  A = Within 0.1 V	Adjustment page Adjustment address	F 13

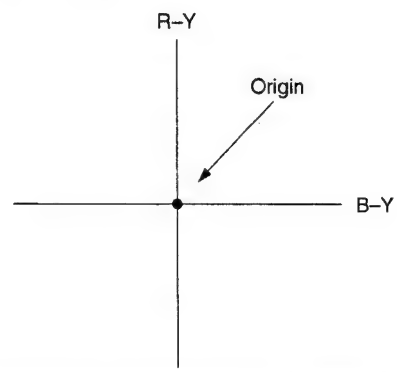
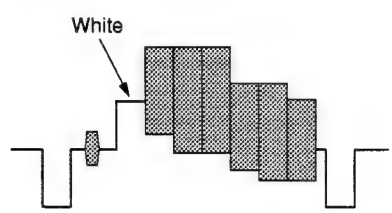
7-2-17. VRB CLP Reference Check

Conditions for adjustment	Spec.	Adjustment
· Input signal: No signal input · Measurement equipment: Digital multimeter	Measurement point: CN101 ㉖ pin (CLP REF) : 0.5 ± 0.1 V Measurement point: CN101 ⑯ pin (V RB) : 0.5 ± 0.1 V	

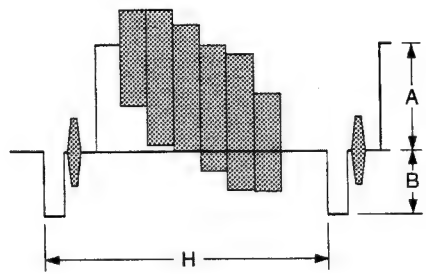
7-2-18. OSD Level Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Input signal: No signal input · Measurement equipment: Oscilloscope	Measurement point: VIDEO OUT (75-ohm termination)  A = 500 ± 30 mV (Y component of white character.)	Adjustment page Adjustment address	F 27

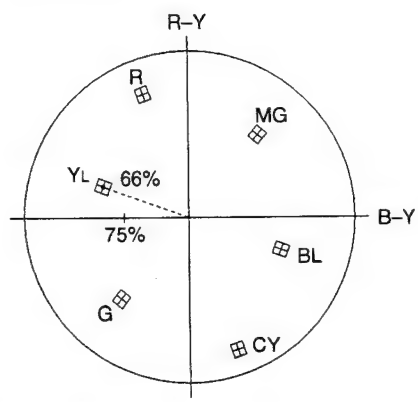
7-2-19. Encoder White Balance Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Mode: Input picture · Input signal: Multi-burst (S VIDEO) · Measurement equipment: Oscilloscope Vectorscope 75-ohm termination	Measurement point: Video output terminal · For vectorscope  The white luminescent spot should coincide with the origin. · For oscilloscope  Adjust so that the chroma signal component (3.58 MHz) that leaks to the white portion of an output waveform is minimum.	Adjustment page Adjustment address ※Perform address 20 and 2A alternately.	F 20(ERG) 2A(EBG)

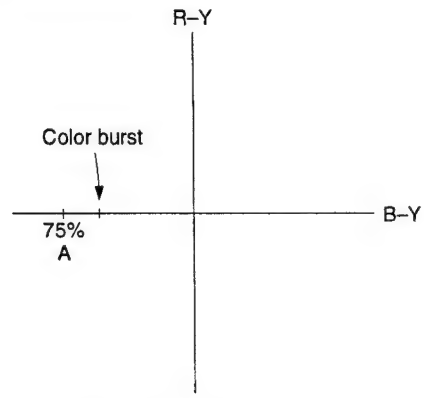
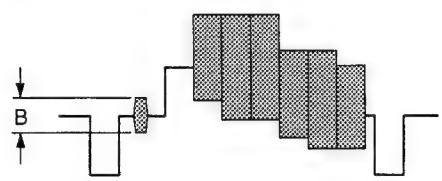
7-2-20. D/A REF Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Mode: Input picture · Input signal: Color-bar (VIDEO) · Measurement equipment: Oscilloscope	Measurement point: Video output terminal (75-ohm termination)  A = 485 ± 20 mV B = 300 ± 30 mV	Adjustment page: F Adjustment address: 1A	

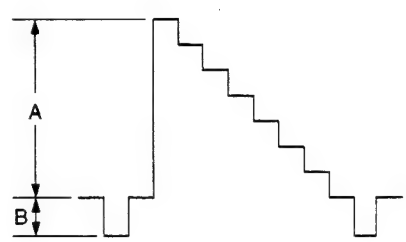
7-2-21. Encoder Chroma Level Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Mode: Input picture · Input signal: Color-bar (VIDEO) · Measurement equipment: Vectorscope · Video output terminal in 75-ohm termination	Measurement point: Video output terminal (Adjust the saturation level of yellow to 66%) · For Vectorscope  · 87% of length between center of yellow "⊞" and cross point of R–Y and B–Y axes. · For Oscilloscope Yellow, Blue: 430 ± 20 mV p-p Cyan, Red: 610 ± 20 mV p-p Magenta, Green: 566 ± 20 mV p-p	Adjustment page: F Adjustment address: 23	

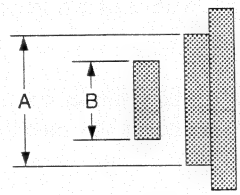
7-2-22. Encoder Color Burst Level Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: Non-signal · Measurement equipment: Vectorscope	Measurement point: Video output (in 75-ohm termination) · For Vectorscope  A: Saturation point one piece · For Oscilloscope  B = 300 ± 10 mV p-p	Adjustment page: F Adjustment address: 24

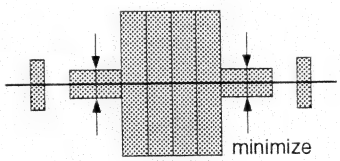
7-2-23. S Video Output Y Level Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: Color-bar (VIDEO) · Measurement equipment: Oscilloscope · S video output Y terminal in 75-ohm termination	Measurement point: S VIDEO OUT. CN502 ③ pin(Y)  A = 485 ± 20 mV B = 300 ± 30 mV	

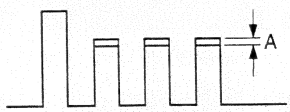
7-2-24. S Video Output Chroma Level Adjustment

Conditions for adjustment	Spec.	Adjustment
· Mode: Input picture · Input signal: Color-bar (VIDEO) · Measurement equipment: Oscilloscope · S video output C terminal in 75-ohm termination	Measurement point: S VIDEO OUT. CN502 ⑤ pin(C)  A = 430 ± 30 mV B = 300 ± 30 mV	

7-2-25. Decoder Hue Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Input signal: Unti PAL signal (SG-408P) (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: CN502 ⑤ pin (S VIDEO OUT) 	Adjustment page Adjustment address	F 11

7-2-26. Decoder DL AMP DAT Adjustment

Conditions for adjustment	Spec.	Adjustment	
· Input signal: Color-bar (S VIDEO) · Measurement equipment: Oscilloscope	Measurement point: CN101 ㉑ pin(B OUT)  A = Within ± 20 mV	Adjustment page Adjustment address DL303 ※ DL303 and address should be adjusted alternately.	F 28

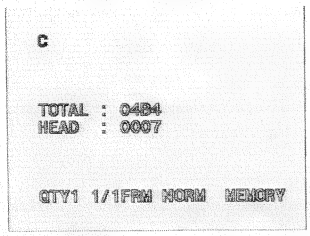
7-3. SERVICE MODE

7-3-1. Entering the Service Mode

* Test signal

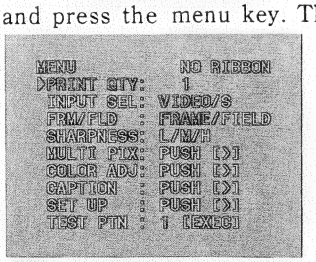
1. Turn on the power switch of the main unit while pressing the STOP and MEMORY IN keys simultaneously.

* The "COLOR VIDEO PRINTER" display blinks on the monitor screen. Press these keys until the motor is loaded and stopped in the meantime, then release them. The screen below then appears.

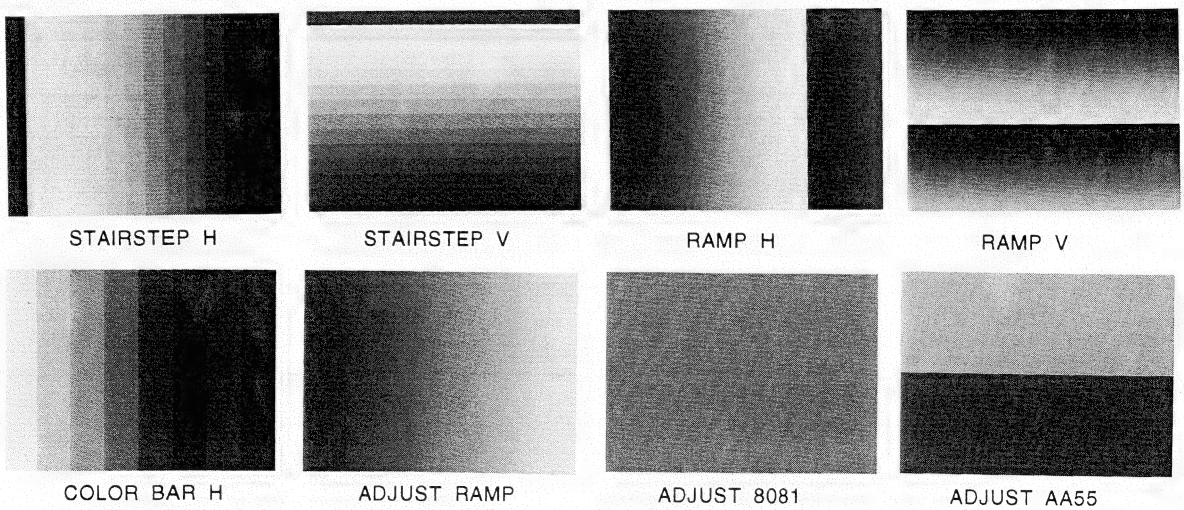


7-3-2. Entering the Print Operation of Pattern Signal

1) Press the SOURCE/MEMORY key on the above screen to display the memory screen and press the menu key. The screen below then appears.



2) Move the cursor to TEST PTN by cursor keys (△ and ▽) and select the desired pattern from among the eight patterns below by cursor keys (◁ and ▷).



3) The screen becomes black when the EXEC key is pressed. (The PLEASE WAIT display then blinks.)

4) Press the PRINT key to print and output a pattern.

5) To change the pattern, execute step (2) and press the EXEC key. Then, print and output the pattern using a PRINT key.

7-3-3. Entering the Print Number Counter

* Use the counter during head replacement.

1) Insert an adjustment tool RM-95 (J-6082-053-A) remote controller into J-101 on the VA-76 board (with the power turned on).

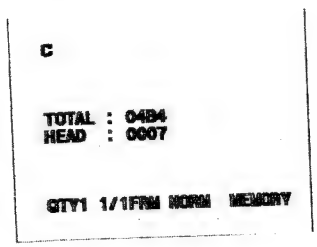
2) To cancel a protector by RM-95, set as shown below.

Page	6	Data	80	Address	00

3) Set as shown below by a remote controller.

Page	F	Data	00 H	Address	EE
Page	F	Data	00 H	Address	EE

* Press the PAUSE key and turn off the power. The counter is then reset.



HEAD : 0000
Total : Accumulated total
*The accumulated total cannot be reset.

7-3-4. Replacing the Head

Head position adjustment tool handling (J-9000-250-A)

1. Print two sheets of stair step signals (H) before head replacement (for comparison of each density).
2. Disconnect 10-pin and 12-pin flat cables from the HM board. (Fig. 1)

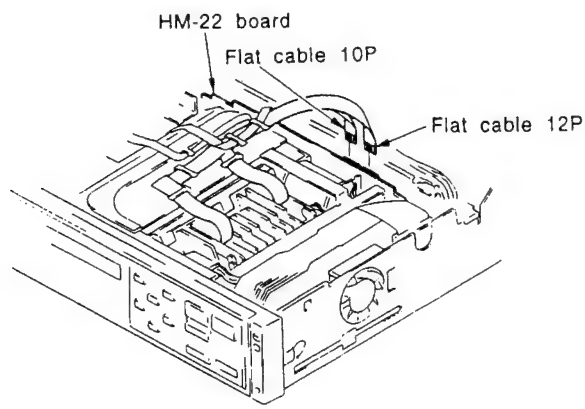


Fig. 1

3. Remove the ribbon guide from the head. (Fig. 2)

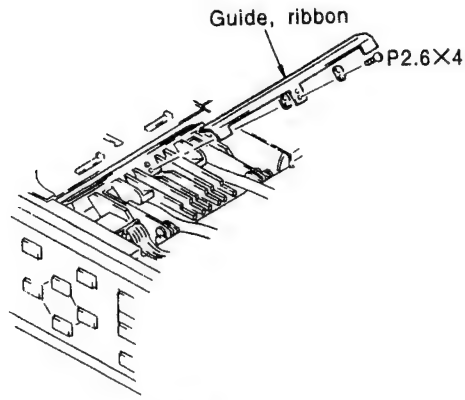


Fig. 2

4. Attach portion R of the Head position adjustment tool (J-9000-250-A) to the shaft of a platen roller. (Fig. 3)

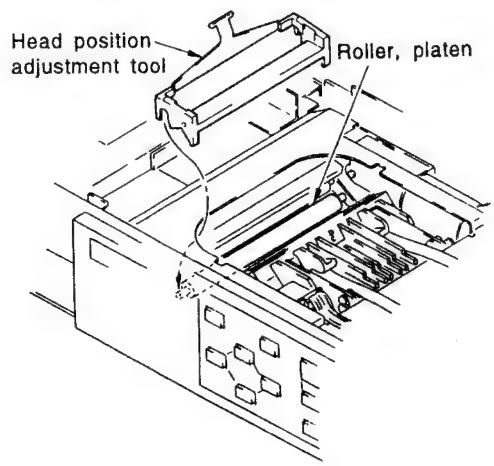


Fig. 3

5. Loosen the two screws, set as shown below by RM-95, and press the PAUSE button.

Page	8	Data	01	Address	10

6. Move the head position upward and set as shown below.

Page	8	Data	01	Address	1A

The head position moves upward every time the PAUSE button is pressed. Move the head upward from the home position by three steps. (Fig. 4)

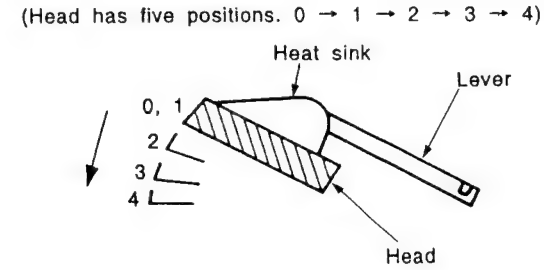


Fig. 4 Five Positions of the Head

7. Tighten the two screws and return the head to the home position. Remove the tool.

Page	8	Data	08	Address	10

8. Attach the ribbon guide and flat cables.
9. Print two sheets of stair step signals (H) and compare the second sheet with the sheet printed before head replacement to adjust the density.
(For more details, refer to the electrical adjustment and head replacement in Service Manual.)

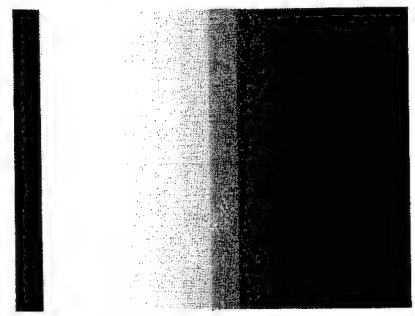
7-4. HEAD REPLACEMENT

7-4-1. Adjustment

1) Mechanical block

Thermal head replacement (Refer to "Printing the Test Signal by RM-95*".)

(1) Print two sheets of paper via the defective head using a stairstep signal (H) before replacing the thermal head. Use the second sheet of paper for comparison of uneven image density.
After the thermal head was replaced, print two sheets of paper using a stairstep signal (H). Adjust so that the second sheet of printed paper is equal in density to the second sheet of paper printed before replacement.

Conditions for adjustment	Spec.	Adjustment
· Mode: Memory picture※1 · Input signal: Stairstep signal (H)※2	Should be equal to the sample image. 	VR201※3

※1 Press the MEMORY IN or SOURCE/MEMORY button of the unit.
※2 Refer to the stairstep signal (H) in "Entering the Test Signal".
※3 Adjust using VR201 on the power board while pressing switch S705 on the HM board.
[Voltage ⊕(thick); voltage ⊖(thin)]

SONY

SP6301

COLOR VIDEO PRINTER

UP-1200A
UP-1200AEPM

SERVICE MANUAL

SUPPLEMENT-1

Please add and replace your manual with this SUPPLEMENT-1.

SUBJECT

- EXPLODED VIEWS
- ELECTRICAL PARTS LIST

1. CORRECT FOLLOWING ITEMS IN THE SERVICE MANUAL.

Page		Incorrect			Correct	
166	102	3-183-605-02	LEVER, PAPER SENSOR	⇨	3-183-185-03	LEVER, PAPER SENSOR
169	275	∗3-950-003-01	GUIDE (1) , CASSETTE	⇨	∗3-191-701-01	GUIDE (PRT1) , CASSETTE
189	IC403	8-752-093-18	IC UPD23C1001EAGW-355E2	⇨	8-759-344-94	IC MX23C1010-A12M
	IC404	8-752-093-17	IC UPD23C1001EAGW-354E2	⇨	8-759-473-62	IC MSM531001B-64GS-KR1
190	IC501	8-759-352-14	IC HM51L240CS7-EL	⇨	8-759-392-74	IC MB814400C-70PJN-T6
	IC502	8-759-352-14	IC HM51L240CS7-EL	⇨	8-759-392-74	IC MB814400C-70PJN-T6
	IC503	8-759-352-14	IC HM51L240CS7-EL	⇨	8-759-392-74	IC MB814400C-70PJN-T6
	IC504	8-759-093-89	IC HM51L240AS7-EL	⇨	8-759-392-74	IC MB814400C-70PJN-T6
	IC505	8-759-093-89	IC HM51L240AS7-EL	⇨	8-759-392-74	IC MB814400C-70PJN-T6
	IC506	8-759-093-89	IC HM51L240AS7-EL	⇨	8-759-392-74	IC MB814400C-70PJN-T6
	IC901	8-759-325-71	IC MB89098PFV-G-114-BND	⇨	8-759-437-71 8-759-463-25	IC MB89098RPFV-G-144-BND (UP-1200A) IC MB89098RPFV-G-155-BND (UP-1200AEPM)
193	IC708	8-752-863-53	IC CXP80P116Q	⇨	8-752-888-04 8-752-888-03	IC CXP80116-419Q (UP-1200A) IC CXP80116-418Q (UP-1200AEPM)
	IC704	8-759-344-54	IC IDT6116SA25SO	⇨	8-759-458-13	IC MSM531001B-62GS-KR1
194	R789	1-216-837-11	METAL 22k 5% 1/16W	⇨	1-216-839-11	METAL 33k 5% 1/16W
	R797	1-216-837-11	METAL 22k 5% 1/16W	⇨	1-216-839-11	METAL 33k 5% 1/16W
	R809	1-216-837-11	METAL 22k 5% 1/16W	⇨	1-216-839-11	METAL 33k 5% 1/16W
	R844	1-216-837-11	METAL 22k 5% 1/16W	⇨	1-216-839-11	METAL 33k 5% 1/16W
	R853	1-216-837-11	METAL 22k 5% 1/16W	⇨	1-216-839-11	METAL 33k 5% 1/16W
195		<CRYSTAL>		⇨	<VIBRATOR>	
	X701	1-579-907-21	VIBRATOR, CERAMIC	⇨	1-579-907-21 1-579-906-21	VIBRATOR, CERAMIC (UP-1200A) VIBRATOR, CERAMIC (UP-1200AEPM)
	X703	1-579-906-21	VIBRATOR, CERAMIC	⇨	1-579-906-21 1-579-905-21	VIBRATOR, CERAMIC (UP-1200A) VIBRATOR, CERAMIC (UP-1200AEPM)

Page	Incorrect		Correct
226	7-2-13. Decoder Color (1) Adjustment	⇨	delete
227	7-2-16. Decoder Sharpness Adjustment (Measurement point) IC301	⇨	IC311
229	7-2-20. D/A REF Adjustment A = 485 ± 20 mV B = 300 ± 30 mV	⇨	A = 700 ± 20 mV
	7-2-21. Encoder Chroma Level Adjustment 87 % of length between center of yellow "⊞" and cross point of R-Y and B-Y axes.	⇨	Match the luminance spot of G-ch signal to "⊞" mark.
	Yellow, Blue : 430 ± 20 mVp-p Cyan, Red : 610 ± 20 mVp-p Magenta, Green : 566 ± 20 mVp-p	⇨	Adjust the level difference between white peak level and chroma level to 0 mV. A = 0 ± 20 mV
230	7-2-23. S Video Output Y Level Adjustment	⇨	delete
231	7-2-24. S Video Output Chroma Level Adjustment	⇨	delete

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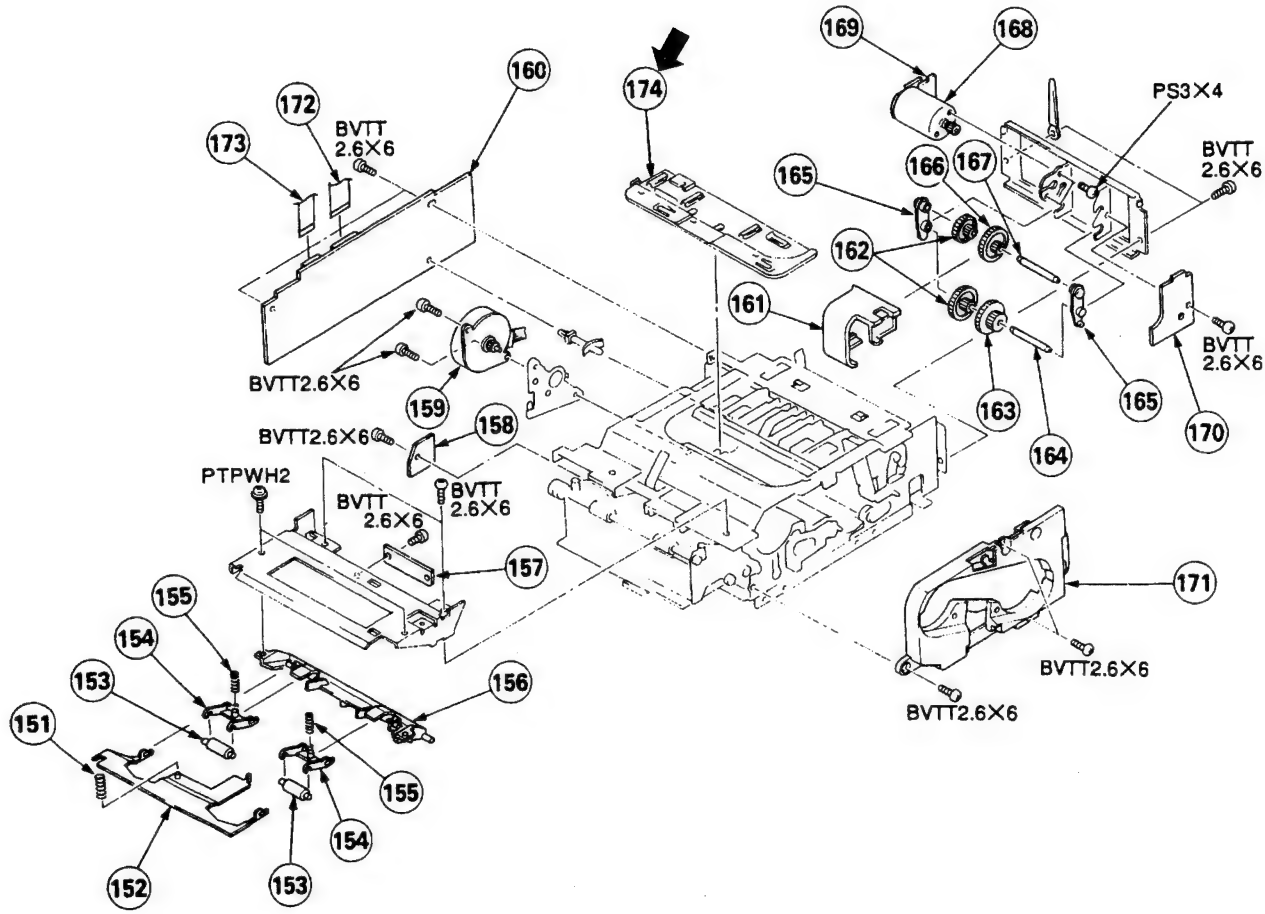
: added portion

5-4. MECHANISM DECK ASSEMBLY(1)



Ref.No	PartNo.	Description	Remark
151	3-183-629-01	SPRING, COMPRESSION (PAPER A)	
152	3-183-605-01	SENSOR LEVER	
153	3-950-009-01	ROLLER, PAPER	
154	3-950-010-01	ARM, PAPER ROLLER	
155	3-950-013-01	SPRING, COMPRESSION	
156	3-183-609-02	GUIDE, UPPER	
157	*A-8275-442-A	SW-41 BOARD, COMPLETE	
158	*A-8275-441-A	SW-213 BOARD, COMPLETE	
159	X-3942-126-1	MOTOR ASSY, STEPPING	
160	*A-8275-449-A	HM-22(L) BOARD, COMPLETE(UP-1200A)	
160	*A-8274-819-A	HM-22P(L) BOARD, COMPLETE(UP-1200AEPM)	
161	*3-952-505-01	GUARD, HEAD GEAR	
162	3-950-019-01	GEAR (A), HEAD DRIVE	

Ref.No	PartNo.	Description	Remark
163	3-950-015-01	GEAR (B), HEAD DRIVE	
164	*3-950-020-01	SHAFT, HEAD DRIVE GEAR	
165	*3-950-017-01	HOLDER, HEAD DRIVE GEAR	
166	3-956-727-01	GEAR (E), HEAD DRIVE	
167	*3-950-214-01	SHAFT (S), HEAD DRIVE GEAR	
168	X-3942-122-1	MOTOR, HEAD DRIVE GEAR ASSY	
169	*A-8275-435-A	SW-215 BOARD, COMPLETE	
170	*A-8275-436-A	SW-212 BOARD, COMPLETE	
171	X-3167-377-1	GUIDE ASSY, CASSETTE ENTRANCE	
172	1-765-052-11	WIRE, FLAT TYPE (16 CORE)	
173	1-765-051-11	WIRE, FLAT TYPE (7 CORE)	
174	3-952-129-02	CLAMP, HEAD HARNESS	

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SWITCHING REGULATOR

There are many mistakes in Switching Regulator part list.
Therefore, use the following Switching regulator part list instead.

Ref.No	PartNo.	Description		Remark
		**********		
⚠	*1-413-942-21	SWITCHING, REGULATOR (UP-1200A)		
		**********		
	9-904-821-01	FUSE CLIP		
	*9-907-116-01	HEAT SINK		
	*9-907-118-01	HEAT SINK		
	*9-907-230-01	PC BOARD		
	9-907-120-01	SPACER		
	*9-907-121-01	INSULATION SHEET		
		<CAPACITOR>		
C101	1-136-192-11	CERAMIC	0.33MF	250V
C102	9-902-038-01	CERAMIC	0.22MF	250V
C103	9-907-227-01	CERAMIC	470PF	125V
C104	9-907-227-01	CERAMIC	470PF	125V
C106	9-907-097-01	ELECT	470MF	200V
C107	9-900-522-01	CERAMIC	2200PF	400V
C108	9-900-525-01	CERAMIC	0.047MF	630V
C109	9-907-098-01	CERAMIC	220PF	1KV
C110	1-130-491-00	CERAMIC	0.047MF	50V
C111	1-124-122-11	ELECT	100MF	50V
C112	1-126-967-11	ELECT	47MF	50V
C113	9-900-525-01	CERAMIC	0.047MF	630V
C114	9-907-098-01	CERAMIC	220PF	1KV
C115	1-128-578-91	ELECT	1MF	100V
C116	1-130-495-00	FILM	0.1MF	50V
C117	1-130-483-00	FILM	0.1MF	50V
C201	9-907-113-01	CERAMIC	1000PF	1KV
C202	9-907-114-01	ELECT	1000MF	35V
C203	1-124-906-11	ELECT	4.7MF	50V
C204	9-907-114-01	ELECT	1000MF	35V
C205	1-126-965-51	ELECT	22MF	50V
C207	1-130-483-00	FILM	0.01MF	50V
C208	9-907-113-01	CERAMIC	1000PF	1KV
C209	1-126-927-11	ELECT	2200MF	10V
C210	1-126-927-11	ELECT	2200MF	10V
C211	1-124-903-11	ELECT	1MF	50V
C212	1-126-926-11	ELECT	1000MF	10V
C213	1-126-933-11	ELECT	100MF	10V
C214	1-126-933-11	ELECT	100MF	10V
C215	9-907-113-01	CERAMIC	1000PF	1KV
C216	1-124-557-11	ELECT	1000MF	25V
C217	1-216-933-11	ELECT	100MF	16V
C218	1-126-926-11	ELECT	1000MF	10V
C219	1-126-933-11	ELECT	100MF	10V
C220	1-130-483-00	FILM	0.01MF	50V
C221	1-130-491-00	FILM	0.047MF	50V
C222	1-124-122-11	ELECT	100MF	50V
		<CONNECTOR>		
CN1	9-907-104-01	CONNECTOR 4P		
CN2	9-907-105-01	CONNECTOR 2P		
CN3	9-907-105-01	CONNECTOR 2P		
CN901	1-560-892-00	CONNECTOR 4P		
CN902	1-560-894-00	CONNECTOR 6P		

Ref.No	PartNo.	Description	Remark
CN903	1-568-792-11	CONNECTOR 15P	
CN904	1-506-468-11	CONNECTOR 3P	
CN905	1-506-468-11	CONNECTOR 3P	
CN906	1-564-013-31	CONNECTOR 3P	
CN907	1-568-779-11	CONNECTOR 2P	
		<DIODE>	
D101	8-719-500-57	DIODE D3SBA40	
D102	9-996-310-01	DIODE AG01A	
D103	8-719-313-16	DIODE AU02A	
D104	9-907-090-01	DIODE RD47E	
D105	8-719-114-97	DIODE RD24JSB	
D106	8-719-200-02	DIODE 10E-2	
D107	9-900-514-01	DIODE GMA01	
D108	9-902-050-01	DIODE RM11C	
D109	9-900-514-01	DIODE GMA01	
D201	8-719-501-34	DIODE S3VC40R	
D202	8-719-501-34	DIODE S3VC40R	
D203	8-719-200-02	DIODE 10E-2	
D204	9-900-535-01	DIODE AU02A	
D205	9-904-797-01	DIODE RK44	
D206	9-904-797-01	DIODE RK44	
D207	8-719-501-34	DIODE S3VC40R	
D208	8-719-160-68	DIODE RD18FB2	
D209	8-719-982-04	DIODE ERB81-004	
D210	9-904-799-01	DIODE MA2120	
		<FUSE>	
F101	9-907-103-01	FUSE 4A 250V	
		<IC>	
IC101	9-904-782-01	IC STR-S6525	
IC102	8-759-985-13	IC MA2430	
IC201	8-759-420-19	IC AN1431T	
IC202	8-759-135-80	IC UPC358C	
IC203	8-759-420-19	IC AN1431T	
IC204	8-759-420-19	IC AN1431T	
IC205	8-749-920-43	IC SI-3050CA	
IC206	8-749-921-21	IC SI-3120C	
IC207	8-749-920-43	IC SI-3050CA	
IC208	8-749-920-43	IC SI-3050CA	
		<COIL>	
L101	9-907-229-01	FILTER	
L102	9-907-229-01	FILTER	
L103	9-904-796-01	BEADS CORE	
L104	9-904-796-01	BEADS CORE	
L201	9-902-553-01	BEADS CORE	
L202	9-902-553-01	BEADS CORE	
L203	9-907-112-01	CHOKE COIL	
L204	9-902-553-01	BEADS CORE	
L205	9-907-112-01	CHOKE COIL	
L206	9-902-553-01	BEADS CORE	

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

SWITCHING REGULATOR

Ref.No	PartNo.	Description		Remark
		<PHOTO COUPLER>		
PC101	8-719-161-00	PHOTO COUPLER PS2501		
PC102	8-719-161-00	PHOTO COUPLER PS2501		
PC201	8-719-161-00	PHOTO COUPLER PS2501		
		<TRANSISTOR>		
Q101	9-904-781-01	TRANSISTOR 2SC2061		
Q201	8-729-900-80	TRANSISTOR DTC114ES		
Q202	8-729-900-80	TRANSISTOR DTC114ES		
Q203	8-729-900-80	TRANSISTOR DTC114ES		
Q204	8-729-900-80	TRANSISTOR DTC114ES		
Q205	8-729-900-80	TRANSISTOR DTC114ES		
		<RESISTOR>		
R101	1-202-719-00	SOLID	1M	1/2W
R102	9-904-783-01	THERMISTOR	5	25℃
R103	9-907-225-01	FILM	47K	1W
R104	9-907-225-01	FILM	47K	1W
R105	1-247-887-00	CARBON	220K	1/4W
R106	1-247-887-00	CARBON	220K	1/4W
R107	1-215-925-11	FILM	22K	3W
R108	1-215-925-11	FILM	22K	3W
R109	1-215-882-00	FILM	22	2W
R110	9-904-784-01	METAL	0.15	2W
R111	1-260-064-11	CARBON	1	1/2W
R112	1-260-080-11	CARBON	27	1/2W
R113	1-247-855-31	CARBON	10K	1/4W
R114	1-249-412-11	CARBON	390	1/4W
R115	1-249-437-11	CARBON	47K	1/4W
R116	1-249-411-11	CARBON	330	1/4W
R117	1-249-423-11	CARBON	3.3K	1/4W
R118	1-249-441-11	CARBON	100K	1/4W
R119	1-249-441-11	CARBON	100K	1/4W
R120	1-249-433-11	CARBON	22K	1/4W
R121	1-215-927-00	FILM	47K	3W
R122	1-215-927-00	FILM	47K	3W
R123	9-904-899-01	CARBON	15	1W
R124	9-907-226-01	CARBON	22	1W
R125	1-260-087-11	CARBON	100	1/2W
R126	1-249-408-11	THERMISTOR	180	1/4W
R201	1-215-916-00	FILM	680	3W
R202	1-215-916-00	FILM	680	3W
R203	1-260-099-11	CARBON	1K	1/2W
R204	1-247-855-31	CARBON	10K	1/4W
R205	1-247-855-31	CARBON	10K	1/4W
R206	1-249-420-11	CARBON	1.8K	1/4W
R207	1-249-417-11	CARBON	1K	1/4W
R208	1-249-423-11	CARBON	3.3K	1/4W
R209	1-249-415-11	CARBON	680	1/2W
R210	9-902-556-01	METAL	1	1/4W
R211	1-247-855-31	CARBON	10K	1/4W
R212	9-904-801-01	FILM	8.25K	1/4W
R213	1-247-855-31	CARBON	10K	1/4W
R214	1-247-855-31	CARBON	10K	1/4W
R215	1-247-855-31	CARBON	10K	1/4W
R216	1-247-855-31	CARBON	10K	1/4W
R217	1-249-425-11	CARBON	4.7K	1/4W
R218	1-247-855-31	CARBON	10K	1/4W

Ref.No	PartNo.	Description		Remark
R219	1-247-855-31	CARBON	10K	1/4W
R220	1-214-736-00	FILM	2K	1/4W
R221	1-214-753-00	FILM	10K	1/4W
R222	1-260-083-11	CARBON	47	1/2W
R223	1-244-417-11	CARBON	1K	1/4W
R224	1-249-419-11	CARBON	1.5K	1/4W
R225	1-247-855-31	CARBON	10K	1/4W
R226	9-907-107-01	METAL OXIDE	430	1/4W
	9-907-094-01	METAL OXIDE	1.2K	1/4W
R227	9-907-108-01	CARBON	0.22	1/4W
R228	9-907-108-01	CARBON	0.22	1/4W
R229	9-907-109-01	METAL OXIDE	1.3K	1/4W
	9-907-107-01	METAL OXIDE	430	1/4W
R230	1-249-416-11	CARBON	820	1/4W
R231	1-249-414-11	CARBON	560	1/4W
		<RELAY>		
RL201	9-907-115-01	RELAY		
		<TRANSFORMER>		
T101	9-904-792-01	SWITCHING		
T102	9-907-228-01	SWITCHING		
		<VARIABLE RESISTOR>		
VR201	9-907-110-01	RES, VER, CARBON	2K	1/10W
VR202	9-907-111-01	RES, VER, CARBON	500	1/10W
VR203	1-238-570-11	RES, VER, CARBON	2.2K	1/10W
VR204	1-238-570-11	RES, VER, CARBON	2.2K	1/10W

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SWITCHING REGULATOR

Ref. No. or Q'ty	Part No.	SP	Description
1pc	⚠ 1-413-946-21	o	SWITCHING, REGULATOR (UP-1200AEPM)
2pcs	9-904-821-01	s	FUSE CLIP
1pc	9-907-116-01	o	HEAT SINK (IC101, IC102)
1pc	9-907-117-01	o	HEAT SINK (IC103)
3pcs	9-907-118-01	o	HEAT SINK (IC205, IC206, IC207, IC208)
1pc	9-907-119-01	o	PRINTED CIRCUIT BOARD
1pc	9-907-120-01	s	SPACER
2pcs	9-907-121-01	o	SHEET, INSULATING
1pc	9-907-122-01	o	SHEET, INSULATING
C101	1-137-472-11	s	FILM 0.68uF 250V
C102	9-902-038-01	s	FILM 0.22uF 250V
C103	9-909-242-01	s	CERAMIC 1000PF 250V
C104	9-909-242-01	s	CERAMIC 1000PF 250V
C105	9-907-096-01	s	CERAMIC 4700PF 250V
C106		s	ELECT 220uF 400V
C107	9-900-522-01	s	CERAMIC 2200PF 250V
C108	9-900-525-01	s	FILM 0.047uF 630V
C109	9-907-098-01	s	CERAMIC 220PF 1KV
C110	1-130-491-00	s	FILM 0.047uF 50V
C111	1-124-122-11	s	ELECT 100uF 50V
C112	1-126-967-11	s	ELECT 47uF 50V
C113	9-900-525-01	s	FILM 0.047uF 630V
C114	9-907-098-01	s	CERAMIC 220PF 1KV
C115	1-126-964-11	s	ELECT 10uF 50V
C116	1-130-495-00	s	FILM 0.1uF 50V
C118	9-909-242-01	s	CERAMIC 1000PF 250V
C119	9-909-242-01	s	CERAMIC 1000PF 250V
C120	9-907-096-01	s	CERAMIC 4700PF 250V
C121		s	ELECT 220uF 400V
C122	1-130-491-00	s	FILM 0.047uF 50V
C123	1-136-189-00	s	FILM 0.1uF 250V
C124	1-136-189-00	s	FILM 0.1uF 250V
C125	9-907-099-01	s	FILM 4.7uF 400V
C126	1-124-903-11	s	FILM 1uF 50V
C201	9-907-113-01	s	CERAMIC 1000PF 1KV
C202	9-907-114-01	s	ELECT 1000uF 35V
C203	1-124-927-11	s	ELECT 4.7uF 100V
C204	9-907-114-01	s	ELECT 1000uF 35V
C205	1-126-233-11	s	ELECT 22uF 50V
C207	1-130-483-00	s	FILM 0.01uF 50V
C208	9-907-113-01	s	CERAMIC 1000PF 1KV
C209	1-126-927-11	s	ELECT 2200uF 10V
C210	1-126-927-11	s	ELECT 2200uF 10V
C211	1-124-903-11	s	ELECT 1uF 50V
C212	1-126-926-11	s	ELECT 1000uF 10V
C213	1-126-933-11	s	ELECT 100uF 16V
C214	1-126-933-11	s	ELECT 100uF 16V
C215	9-907-113-01	s	CERAMIC 1000PF 1KV
C216	1-124-557-11	s	ELECT 1000uF 25V
C217	1-126-933-11	s	ELECT 100uF 16V
C218	1-126-926-11	s	ELECT 1000uF 10V
C219	1-126-933-11	s	ELECT 100uF 16V
C220	1-130-483-00	s	FILM 0.01uF 50V
C222	1-124-122-11	s	ELECT 100uF 50V
CN1	9-907-104-01	s	CONNECTOR 4P
CN2	9-907-105-01	s	CONNECTOR 2P
CN3	9-907-105-01	s	CONNECTOR 2P
CN901	1-560-892-00	s	CONNECTOR 4P
CN902	1-560-894-00	s	CONNECTOR 6P
CN903	1-568-702-11	s	CONNECTOR 15P
CN904	1-506-468-11	s	CONNECTOR 3P

(SWITCHING REGULATOR)

Ref. No. or Q'ty	Part No.	SP	Description
CN905	1-506-468-11	s	CONNECTOR 3P, BLACK
CN906	1-564-013-31	s	CONNECTOR 3P, RED
CN907	1-568-779-11	s	CONNECTOR 2P
D101	8-719-500-58	s	BRIGE DIODE D3SBA60
D102	8-719-030-25	s	DIODE EG01C-V0
D103	8-719-313-16	s	DIODE AU02A
D104	9-907-090-01	s	DIODE RD47E
D105	8-719-114-97	s	DIODE RD24JSB
D106	8-719-200-82	s	DIODE 11ES2
D107	1-806-836-11	s	DIODE MA165
D108	8-719-304-63	s	DIODE RM11C
D109	1-806-836-11	s	DIODE MA165
D110	8-719-304-63	s	DIODE RM11C
D111	8-719-304-63	s	DIODE RM11C
D201	8-719-501-34	s	DIODE S3VC40R
D202	8-719-501-34	s	DIODE S3VC40R
D203	8-719-200-82	s	DIODE 11ES2
D204	8-719-313-16	s	DIODE AU02A
D205	9-903-219-01	s	DIODE RK44
D206	9-903-219-01	s	DIODE RK44
D207	8-719-501-34	s	DIODE S3VC40R
D208	8-719-160-68	s	DIODE RD18FB2
D209	8-719-981-00	s	DIODE ERC81-004
D210	9-904-799-01	s	DIODE MA2120
F101	9-907-103-01	s	FUSE 4A 250V
F102	9-907-103-01	s	FUSE 4A 250V
IC101	8-749-924-40	s	IC STR-S6525
IC102	8-759-977-63	s	IC MA2830
IC103	8-749-923-66	s	IC STR-83145
IC201	8-759-420-19	s	IC AN1431T25
IC202	8-759-135-80	s	IC UPC358C
IC203	8-759-420-19	s	IC AN1431T25
IC204	8-759-420-19	s	IC AN1431T25
IC205	8-749-920-43	s	IC SI-3050CA
IC206	8-749-921-21	s	IC SI-3120CA
IC207	8-749-920-43	s	IC SI-3050CA
IC208	8-749-920-43	s	IC SI-3050CA
L101	9-907-102-01	s	FILTER, LINE
L102	9-907-102-01	s	FILTER, LINE
L103	9-904-796-01	s	BEAD CORE
L104	9-904-796-01	s	BEAD CORE
L201	9-902-553-01	s	BEAD CORE
L202	9-902-553-01	s	BEAD CORE
L203	9-907-112-01	s	COIL, CHOKE 10uH
L204	9-902-553-01	s	BEAD CORE
L205	9-907-112-01	s	COIL, CHOKE 10uH
L206	9-902-553-01	s	BEAD CORE
PC101	8-749-923-50	s	PHOTOCOUPLER PC111YS
PC102	8-749-923-50	s	PHOTOCOUPLER PC111YS
PC201	8-719-161-00	s	PHOTOCOUPLER PS2501-1-H
Q101	9-904-781-01	s	TRANSISTOR 2SC2061
Q201	8-729-900-80	s	TRANSISTOR DTC114ES
Q202	8-729-900-80	s	TRANSISTOR DTC114ES
Q203	8-729-900-80	s	TRANSISTOR DTC114ES
Q204	8-729-900-80	s	TRANSISTOR DTC114ES
Q205	8-729-900-80	s	TRANSISTOR DTC114ES
R101	1-202-719-00	s	COMP 1M 1/2W
R102	9-904-783-01	s	THERMISTOR 5

(SWITCHING REGULATOR)

Ref. No. or Q'ty	Part No.	SP	Description
R103	1-218-642-11	s	METAL 100K 1W
R104	1-218-642-11	s	METAL 100K 1W
R105	1-260-127-11	s	CARBON 220K 1/2W
R106	1-260-127-11	s	CARBON 220K 1/2W
R107	1-215-925-11	s	METAL 22K 3W
R108	1-215-925-11	s	METAL 22K 3W
R109	1-215-882-00	s	METAL 22 2W
R110	9-907-093-01	s	WIREWOUND 0.15 2W
R111	9-907-094-01	s	RESISTOR 1/2W
R112	1-260-080-11	s	CARBON 27 1/2W
R113	1-247-855-31	s	CARBON 10K 1/4W
R114	1-249-412-11	s	CARBON 390 1/4W
R115	1-247-871-11	s	CARBON 47K 1/4W
R116	1-249-411-11	s	CARBON 330 1/4W
R117	1-249-423-11	s	CARBON 3.3K 1/4W
R118	1-247-883-00	s	CARBON 150K 1/4W
R119	1-247-883-00	s	CARBON 150K 1/4W
R120	1-240-441-11	s	CARBON 100K 1/4W
R121	1-215-928-11	s	METAL 68K 3W
R122	1-215-928-11	s	METAL 68K 3W
R123	1-215-863-11	s	METAL 100 1W
R124	1-215-863-11	s	METAL 100 1W
R125	1-260-091-11	s	CARBON 220 1/2W
R126	9-904-783-01	s	THERMISTOR 5
R127	1-260-127-11	s	CARBON 220K 1/2W
R128	1-260-127-11	s	CARBON 220K 1/2W
R129	2-249-389-11	s	CARBON 4.7 1/4W
R130	1-247-883-00	s	CARBON 150K 1/4W
R131	1-249-408-11	s	CARBON 180 1/4W
R132	1-240-441-11	s	CARBON 100K 1/4W
R201	1-215-916-00	s	METAL 680 3W
R202	1-215-916-00	s	METAL 680 3W
R203	1-260-099-11	s	CARBON 1K 1/2W
R204	1-247-855-31	s	CARBON 10K 1/4W
R205	1-247-855-31	s	CARBON 10K 1/4W
R206	1-249-420-11	s	CARBON 1.8K 1/4W
R207	1-249-417-11	s	CARBON 1K 1/4W
R208	1-249-423-11	s	CARBON 3.3K 1/4W
R209	1-249-415-11	s	CARBON 680 1/2W
R210	9-902-556-01	s	RES, FUSIBLE 1 1/4W
R211	1-247-855-31	s	CARBON 10K 1/4W
R212	9-904-801-01	s	METAL 8.25K 1/4W
R213	1-247-855-31	s	CARBON 10K 1/4W
R214	1-247-855-31	s	CARBON 10K 1/4W
R215	1-247-855-31	s	CARBON 10K 1/4W
R216	1-247-855-31	s	CARBON 10K 1/4W
R217	1-249-425-11	s	CARBON 4.7K 1/4W
R218	1-247-855-31	s	CARBON 10K 1/4W
R219	1-247-855-31	s	CARBON 10K 1/4W
R220	1-215-428-00	s	METAL 2K 1/4W
R221	1-214-753-00	s	METAL 10K 1/4W
R222	1-260-083-11	s	CARBON 47K 1/2W
R223	1-249-417-11	s	CARBON 1K 1/4W
R224	1-249-419-11	s	CARBON 1.5K 1/4W
R225	1-247-855-31	s	CARBON 10K 1/4W
R226	9-907-107-01	s	RESISTOR 430 14W
R227	9-907-108-01	s	RES, FUSIBLE 0.22 14W
R228	9-907-108-01	s	RES, FUSIBLE 0.22 14W
R229	9-907-109-01	s	RESISTOR 1.3K 14W
R230	1-249-416-11	s	CARBON 820 1/4W
R231	1-249-414-11	s	CARBON 560 1/4W

(SWITCHING REGULATOR)

Ref. No. or Q'ty	Part No.	SP	Description
RY201	9-907-115-01	s	RELAY
T101	9-907-100-01	s	SWITCHING
T102	9-907-101-01	s	SWITCHING
TC101	9-907-092-01	s	THERMAL CUT OFF M135
VR201	9-907-110-01	s	RES, VAR CARBON 2K
VR202	9-907-111-01	s	RES, VAR CARBON 500
VR203	1-238-570-11	s	RES, VAR CARBON 2.2K
VR204	1-238-570-11	s	RES, VAR CARBON 2.2K